

**Rico Surface Water Sampling  
Supplemental Surface Water Quality Monitoring  
Rico, Colorado  
Data Summary Report**

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Rico, Colorado  
Surface Water Sampling Report  
July 2011 Sampling Event

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**Rico, Colorado**  
**Surface Water Sampling Report**  
**July 2011 Sampling Event**

## **1.0 Introduction**

In accordance with the Rico Sampling and Analysis Plan for Supplemental Surface Water Quality Monitoring at Rico, CO prepared by AECOM, dated November 2010, the surface water sampling event was completed on July 20<sup>th</sup> and 21<sup>st</sup>, 2011. Sampling was completed by Anderson Engineering Co. Inc., by technicians who are familiar with the Rico sites and the BP Control of Work Management System. Surface water samples were collected from prescribed locations within the St. Louis settling pond system and at the system discharge (002) to the Dolores River (collectively referred to as the St. Louis pond system), and previously sampled locations along the Dolores River above, at and below the St. Louis pond system. Figure 1 and Figure 2 (see Appendix A) illustrate the location of the various sampling stations. Sample results are summarized and laboratory analytical results are attached with quality control documentation.

## **2.0 Field Sampling**

### **2.1 Sampling Frequency**

The sampling period represented by this sampling event is for the month of July of 2011. Sampling will be performed on a monthly basis until at least April of 2012

### **2.2 Water Quality and Flow Measurement Sampling Locations**

Samples were collected from the locations described on Table 1 and shown on Figure 1 and Figure 2 in Appendix A.

The Dolores River was sampled above the St. Louis pond system, and below the adit outfalls downstream of the reclaimed Silver Swan Mine area. The river was also sampled at the USGS gaging station downstream of the Silver Swan site.

**TABLE 1 - Sample Location Summary**

<b>SITE ID</b>	<b>SITE DESCRIPTION</b>
DR-4-SW	Dolores River below Silver Swan
DR-1	Dolores River above St. Louis settling pond system
DR-2	Dolores River immediately above the St. Louis settling pond system outfall
DR-3	St. Louis tunnel discharge at adit
DR-4	Discharge of Pond 15
DR-5	Discharge of Pond 8
DR-6	St. Louis settling pond system outfall to the Dolores River
DR-7	Dolores River below St. Louis settling pond system outfall
DR-G	Dolores River at USGS gaging station #09165000

### **2.3 Sampling Station Descriptions**

The sampling requirements and stations are described in detail below:

**DR-4-SW.** Dolores River below Silver Swan. Sampling/flow measurement location is on the Dolores River below the Silver Swan site just downstream of a bend in the river and below a cemetery on the east bank. Flow measurements was collected by flowmeter.

**DR-1.** Dolores River above St. Louis settling ponds system. The sampling/flow measurement location is on the Dolores River approximately 50 feet upstream of the Rico Ranger Station. Flow measurements was collected by flowmeter.

**DR-2.** Dolores River immediately above the St. Louis settling pond system outfall. Sampling/flow measurement location is on the Dolores just above the 002 discharge outfall, and upstream of the hot tub discharge. The site is located directly adjacent to the thermal discharge which supplies the hot tub. Flow measurement was collected by flowmeter.

**DR-3.** St. Louis tunnel discharge at adit entrance. Sampling location is at the inlet of the flume, just before the throat. Flow measurement by an installed 9" flume at the sampling location.

**DR-4.** Discharge of Pond 15. Flow measurement was collected by flowmeter.

**DR-5.** Discharge of Pond 8. Flow measurement was collected by flowmeter.

**DR-6.** St. Louis settling ponds system outfall to the Dolores River (Outfall 002). Flow measurement by installed 9" flume.

**DR-7.** Dolores River below St. Louis settling ponds system outfall. Sampling/flow measurement location is located just off the entrance road to the St. Louis ponds site where the Dolores River is adjacent to the entrance road. The site is located approximately 75 feet downstream from a large bend in the river that first brings the Dolores adjacent to the entrance road. Flow measurements were collected by flowmeter.

**DR-G.** Located at the USGS gauging station #09165000. Flow measurements were collected by flowmeter.

### **3.0 Sampling and Analysis Parameters and Methods**

All samples were collected as grab samples. Samples were collected from well-mixed locations, which are representative of conditions within the flow stream. Lab-certified plastic bottles were used to collect sample water for analyses. Clean hands, dirty hands procedures were followed throughout the sampling. For quality control purposes, one duplicate sample and one field blank were included with the water samples being submitted to the laboratory for analysis.

Lab-certified plastic bottles were used to collect all water samples. Sample water was first collected in clean plastic jugs, and within 10 minutes, placed in the sampling bottles. A 500 mL HDPE bottle was used to collect a sample for alkalinity, TDS, TSS, and sulfate analyses. A 250 mL HDPE bottle was used to collect a sample for salinity analysis. Sample water for dissolved metals analysis and potentially dissolved metals analysis was filtered through a 0.45 $\mu$ m filter into a 250 mL sample bottle containing nitric acid preservative. Sample water for total recoverable metals analysis and water hardness was collected without filtration in a 250 mL HDPE sample bottle containing nitric acid preservative. Sample water for cyanide analysis was collected without filtration into a 250 mL HDPE sample bottle containing sodium hydroxide preservative.

Field parameters were measured at the time of sample collection. Field measurement data for pH, temperature, conductivity, and dissolved oxygen were recorded using an EXTECH Instruments DO610 ExStik II DO/pH/Conductivity kit, and results were logged in the field log book. The field instrument was calibrated prior to use with equipment calibration and maintenance standard solutions and consistent with manufacturer's instructions. Weather parameters including temperature and precipitation were obtained and documented.

All sample bottles were labeled to identify sample number, date and time of collection, type of analysis, and appropriate preservative. In addition, sample analysis/chain of custody forms were completed and processed at the time of sample collection. Original chain of custody forms are signed, dated, and placed in the sample container prior to sealing the container for shipment.

Water samples were kept in cooled containers and sent to the analytical laboratory. Samples were submitted to Pace Analytical Laboratories in Lenexa, Kansas for analysis by analytical procedures listed on Table 2. Analysis was performed according to methods specified in 40 CFR, Part 136 or other methods approved by the EPA. Laboratory methods and reporting limits for all parameters are presented in Table 2. Laboratory results and supporting documentation including quality assurance results are contained in the Appendix C and Appendix D of this report.

**TABLE 2 - Analytical Procedures Summary**

Parameter	Detection Limit (MDL)	Method
<b>Field Parameters</b>		
pH (s.u.)	+/- 0.01 pH	EPA 150.2
Temperature (°C)	+/- 1°C	Standard Method 2550
Conductivity ( $\mu\text{mhos}/\text{cm}$ )	+/- 2% Full Scale	EPA 120.1
Dissolved Oxygen	+/- 2% Full Scale	SM 4500-OG
<b>Non-Metals</b>		
Alkalinity (mg/L as $\text{CaCO}_3$ )	RL – 20 mg/L	EPA 310.1
Hardness (mg/L as $\text{CaCO}_3$ )	RL – 0.5 mg/L	SM 2340 B
Total Dissolved Solids (mg/L as TDS)	RL – 5.0 mg/L	SM 2540C
Total Suspended Solids (mg/L as TSS)	RL – 5.0 mg/L	SM 2540D
Cyanide ( $\mu\text{g}/\text{L}$ as CN)	RL – 0.005 mg/L	EPA 335.4
Salinity	RL – 6 mg/L	SM 2510B (calculated)
Sulfate (mg/L as $\text{SO}_4$ )	RL – 1 mg/L	EPA 300.0
<b>Total and Dissolved Metals</b>		
Aluminum ( $\mu\text{g}/\text{L}$ as Al)	2 $\mu\text{g}/\text{L}$	EPA 200.8
Antimony ( $\mu\text{g}/\text{L}$ as Sb)	0.07 $\mu\text{g}/\text{L}$	EPA 200.8
Arsenic ( $\mu\text{g}/\text{L}$ as As)	0.09 $\mu\text{g}/\text{L}$	EPA 200.8
Barium ( $\mu\text{g}/\text{L}$ as Ba)	0.08 $\mu\text{g}/\text{L}$	EPA 200.8
Beryllium ( $\mu\text{g}/\text{L}$ as Be)	0.02 $\mu\text{g}/\text{L}$	EPA 200.8
Cadmium ( $\mu\text{g}/\text{L}$ as Cd)	0.03 $\mu\text{g}/\text{L}$	EPA 200.8
Calcium ( $\mu\text{g}/\text{L}$ as Ca)	10 $\mu\text{g}/\text{L}$	EPA 200.8
Chromium (ug/l as Cr)	0.25 ug/L	EPA 200.8
Copper ( $\mu\text{g}/\text{L}$ as Cu)	0.07 $\mu\text{g}/\text{L}$	EPA 200.8
Iron ( $\mu\text{g}/\text{L}$ as Fe)	4.67 $\mu\text{g}/\text{L}$	EPA 200.8
Lead ( $\mu\text{g}/\text{L}$ as Pb)	0.05 $\mu\text{g}/\text{L}$	EPA 200.8
Magnesium ( $\mu\text{g}/\text{L}$ as Mg)	2.5 $\mu\text{g}/\text{L}$	EPA 200.8
Manganese ( $\mu\text{g}/\text{L}$ as Mn)	0.17 $\mu\text{g}/\text{L}$	EPA 200.8
Mercury ( $\mu\text{g}/\text{L}$ as Hg)	0.049 $\mu\text{g}/\text{L}$	EPA 245.1
Nickel ( $\mu\text{g}/\text{L}$ as Ni)	0.07 $\mu\text{g}/\text{L}$	EPA 200.8
Potassium ( $\mu\text{g}/\text{L}$ as K)	10 $\mu\text{g}/\text{L}$	EPA 200.8
Selenium (ug/l as Se)	0.22 ug/L	EPA 200.8
Silver (ug/L as Ag)	0.25 ug/L	EPA 200.8
Sodium ( $\mu\text{g}/\text{L}$ as Na)	25 $\mu\text{g}/\text{L}$	EPA 200.8
Thallium ( $\mu\text{g}/\text{L}$ as Tl)	0.05 ug/L	EPA 200.8
Vanadium ( $\mu\text{g}/\text{L}$ as V)	0.05 ug/L	EPA 200.8
Zinc ( $\mu\text{g}/\text{L}$ as Zn)	2.5 $\mu\text{g}/\text{L}$	EPA 200.8

#### **4.0 Flow Measurement Methods**

Flows were measured at the river sampling locations where accessible. The flow measurements obtained this sampling period are described in Section 2.3. Flow velocity was measured for sampling locations DR-1, DR-2, DR-3, DR-4, DR-5, DR-6, DR-7, DR-4-SW, and DR-G. Cross-sectional areas could be safely obtained at all river sample locations (DR-1, DR-2, DR-7, DR-4-SW, AND DR-G) and at the discharge spillway of pond 8 (DR-5). Refer to Figures 3 through 8 in Appendix E for these cross sections. The flowrates are presented on Table 3 in Appendix B.

Flowrates collected during this sampling event were taken by use of a Marsh-McBirney Flow-Mate Model 2000 portable flow meter using the six-tenths-depth method. This method uses the velocity at six-tenths of the depth as the mean velocity. This method is generally reliable between depths from 0.3 feet to 2.5 feet. Stream sections were selected with the desired characteristics of parallel flows, smooth streambed with minimal obstructions, a straight channel, and a flat streambed. The stream section, perpendicular to the flow was measured in feet. The width of the section was determined and divided into several vertical sections. Flow measurements of velocity (by the six-tenths-depth method) and water depth were measured at each vertical section using the Marsh-McBirney flow meter and wading rod assembly. The flow meter was set to the 3 second fixed period average mode. Flows were calculated for each stream section using the water depth, horizontal distance, and averaged velocity data.

The St. Louis tunnel flow (DR-3) and St. Louis pond discharge (DR-6) currently have Parshall flumes installed. Flow measurements can be determined at these flumes when the depth of flow is known at a particular point. In order to continuously monitor and measure the depth of flow, depth measurement devices were installed on May 11<sup>th</sup>, 2011 and May 12<sup>th</sup>, 2011 at both the north and south flumes. An STI Ultrasonic IRU-5180 automated water level detector was installed at the north Parshall flume. It is suspended over the flow stream and measures the distance from the sensor to the water surface using ultrasonic sound waves. It then uses that value to determine the depth of flow, and reports it. The south flume has a submersible pressure transducer called the OTT Orpheus Mini. It records deviations from a pre-programmed depth of air space from the top edge of the flume down to the water level. Knowing then the total depth of the flume, the depth of flow can be determined. The post processed data for these two devices for the Month of July, 2011 is given in Appendix I and Appendix J.

#### **5.0 Analytical Results**

The results of the laboratory analysis are summarized on Table 4 in Appendix B. The data is organized by sample location. The laboratory results report is contained in Appendix C.

## 6.0 Quality Control

In addition to the standard laboratory Quality Control (QC), field QC samples for this sampling event included a field duplicate and a Field Blank (FB).

### 6.1 Field QC

A field duplicate water sample was collected from sample location DR-3. During sample collection, the duplicate sample bottles were filled simultaneously from the discharge stream of water. The duplicate sample was submitted to the analytical laboratory with the label of DR-8, so as to serve as a "blind duplicate."

Table 5 compares the analytical results from DR-3 and DR-8 and presents the Relative Percent Difference (RPD). The RPD for aqueous samples should be +/- 20%. All comparative values were within +/-20% with the exception of calcium, manganese, zinc, and hardness.

**TABLE 5 - Duplicate of DR-3, Relative Percent Difference (RPD)**

Analyte (Total)	DR-3 ( $\mu\text{g/L}$ )	DR-8 ( $\mu\text{g/L}$ ) Duplicate of DR-3	RPD (%)
Aluminum	416	421	1.19
Antimony	<0.50	<1.0	0.00
Arsenic	<0.50	<1.0	0.00
Barium	20.3	20.9	2.91
Beryllium	0.5	<0.20	0.00
Cadmium	31.5	31.9	1.26
Calcium	223000	193000	-14.42
Chromium	<0.50	<1.0	0.00
Copper	52.7	55	4.27
Iron	4490	4750	5.63
Lead	1.4	1.5	6.90
Magnesium	20200	21400	5.77
Manganese	3190	3280	2.78
Mercury	<0.20	<0.20	0.00
Nickel	9.4	9.9	5.18
Potassium	1570	1560	-0.64
Selenium	<0.50	<1.0	0.00
Sodium	8740	8950	2.37
Thallium	<0.10	<0.20	0.00
Vanadium	<0.10	<0.20	0.00
Zinc	6180	6250	1.13
Alkalinity (mg/L)	71.0	72.8	2.50
Hardness	639000	571000	-11.24
TDS (mg/L)	915	931	1.73
TSS (mg/L)	18.0	18	0.00
Cyanide	<0.0050	<0.0050	0.00
Salinity (mg/L)	712	728	2.22
Sulfate (mg/L)	555	543	-2.19

A Field Blank (FB) was collected by pouring distilled water through the filtering manifold after the first day of sampling and decontaminating the equipment. The FB was analyzed for the same constituents as the other samples. The FB had below detectable concentrations for all metals. The pH was neutral, the Electrical Conductivity (EC) was non-detectable, and it showed a low level of alkalinity.

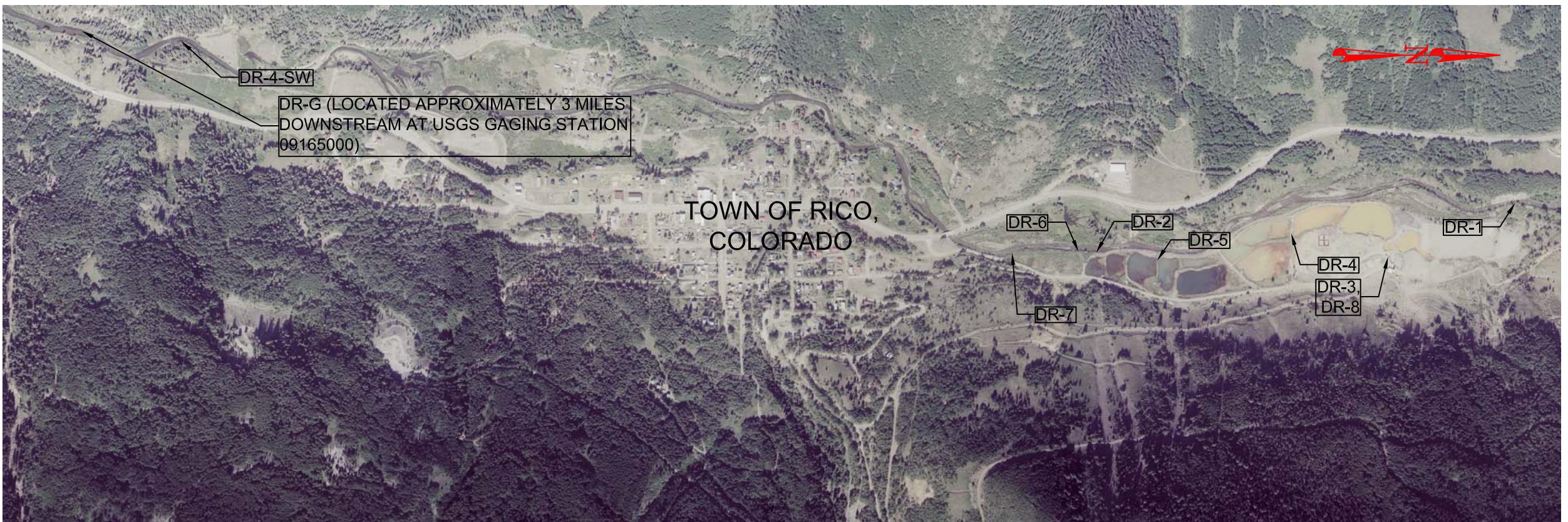
## **6.2 Laboratory QC**

The laboratory control sample (LCS), method blank, matrix spike, and matrix spike duplicate sample results were all within the established limits of concentration, percent recovery, and relative percent difference, with several minor exceptions under the following:

- For the Matrix Spike/Matrix Spike Duplicate for aluminum, calcium, dissolved calcium, dissolved magnesium, dissolved potassium, dissolved silver, dissolved sodium, and for the Matrix Spike Sample for aluminum and calcium, the matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

QC results are summarized in Tables 6 through 9 In Appendix B with the full laboratory QC results presented in Appendix D.

**Appendix A**  
**Sampling Location Maps**



General Notes

Scale in Feet  
0 500 1000

No.	Revision/Issue	Date

ATLANTIC RICHFIELD COMPANY



ANDERSON  
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ENGINEER: CS, MAD

APPROVED:

**RICO SURFACE  
WATER SAMPLING**

**SURFACE WATER  
SAMPLING LOCATIONS**

RICO, CO

Project	Figure
Date 09-FEB-2011	
Scale 1" = 1000'	1



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General Notes

Scale in Feet  
0 175 350

No.	Revision/Issue	Date

ATLANTIC RICHFIELD  
COMPANY



ANDERSON  
ENGINEERING COMPANY, INC.

DRAWN BY: MAD

ENGINEER: CS, MAD

APPROVED:

RICO SURFACE  
WATER SAMPLING

ST. LOUIS POND AREA  
SAMPLING LOCATIONS

RICO, CO

Project	Figure
Date 09-FEB-2011	
Scale 1" = 350'	2

## **Appendix B**

### **Data Tables**

TABLE 3 - Sampling Field Data and Station Information Summary - July 2011

	Field Measurements				GPS Location							
Sample Location	pH	Temp (°C)	EC (mS/cm)	Dissolved Oxygen (ppm)	Latitude	Longitude	Date	By	Stream Cross section area (ft^2)	Flowrate (cfs)	Comments	
DR-1	8.55	19.8	0.1644	2.83	37°42'37.6" N	108°01'56.0" W	7/20/2011	M. DeFriez, S. Cosper	42.1	130	Cross section on the Dolores River above St. Louis settling pond system (approximately 800 ft north of the northern edge of Pond 18). Velocity measurements by flowmeter.	
DR-2	8.4	20.3	0.291	3.67	37°42'03.96" N	108°01'49.89" W	7/20/2011	M. DeFriez, S. Cosper	138	213	Cross section on the Dolores River, approximately 150 ft north of system outfall. Velocity measurements by flowmeter.	
DR-3	6.99	20.6	1.086	2.09	37°42'27.5" N	108°01'50.3" W	7/20/2011	M. DeFriez, S. Cosper	NA	2.04	St Louis adit discharge. Flow measurement by installed Parshall Flume.	
DR-4	7.51	24.4	1.076	2.47	37°42'19.7" N	108°01'52.7" W	7/20/2011	M. DeFriez, S. Cosper	NA	2.30	Pond 15 discharge. Velocity measurements by flowmeter.	
DR-5	7.63	24.6	1.038	1.56	37°42'08.8" N	108°01'49.7" W	7/20/2011	M. DeFriez, S. Cosper	2.77	0.63	Pond 8 was discharging at multiple small locations as well as the spillway. Flow velocity measurements were collected at the spillway and at two other flow paths by flowmeter. Due to the shallow water and multiple paths, accurate flow measurements could not be determined for this sampling location and period. Flow measurements were take at major flow paths by flow meter and by visual estimation.	
									0.3	0.52		
									0.8	0.42		
DR-6	7.28	25.4	1.148	2.17	37°42'02.4" N	108°01'50.2" W	7/20/2011	M. DeFriez, S. Cosper	NA	1.75	Outfall to Dolores River. Flow measurement by installed Parshall Flume.	
DR-7	7.63	18.1	0.300	2.34	37°41'57.12" N	108°01'49.63" W	7/20/2011	M. DeFriez, S. Cosper	57.7	137	Cross section on the Dolores River, approximately 500 ft below St. Louis settling pond system outfall. Velocity measurements by flowmeter.	
DR-8	6.99	20.6	1.086	2.09	37°42'27.5" N	108°01'50.3" W	7/20/2011	M. DeFriez, S. Cosper	NA	2.04	DR-8 is a duplicate sample of DR-3. See comments for DR-3.	
DR-4-SW	7.85	17.1	0.232	3.05	37°40'49.4" N	108°02'09.0" W	7/20/2011	M. DeFriez, S. Cosper	45	119	Cross section on the Dolores River approximately 100 below the Silver Swan site. Velocity measurements by flowmeter.	
DR-G	8.68	21	0.3090	3.45	37°38'19.8" N	108°03'36.5" W	7/20/2011	M. DeFriez, S. Cosper	31.5	79.4	Cross section on the Dolores River at USGS gauging station #09165000, approximately 3.5 miles downstream of the Silver Swan site. Velocity measurements by flowmeter.	
FB	7.19	24.4	0.011	2.02	N/A	N/A	7/20/2011	M. DeFriez, S. Cosper	NA	NA	Field blank	

TABLE 4 - Analytical Sampling Results Summary

Metals (ug/L)																									Non-Metals (mg/L, unless otherwise indicated)										Field Parameters						
Field Sample ID		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)					
<b>DR-1: Delores River above St. Louis settling pond system</b>																																									
DR-1	7/20/11	Total	563	<0.50	0.83	51.0	<0.20	0.085	29000	0.85	1.9	759	1.0	4510	20.8	<0.20	1.6	720	0.56	-	1620	<0.10	2.2	5.2	60.1	90900	114	43.0	<0.0050	114	27.5	8.55	19.8	0.1644	2.83						
DR-1 D	7/20/11	Dissolved	24.3	<0.50	<0.50	42.9	<0.20	<0.080	24600	<0.50	0.63	<50.0	<0.10	3920	7.8	<0.20	0.53	530	<0.50	<0.50	1670	<0.10	0.21	<5.0	<20.0	<71.0	<0.0050	122	31.0	<0.0050	121	34.3	8.4	20.3	0.291	3.67					
<b>DR-2: Delores River immediately above the St. Louis settling pond system outfall</b>																																									
DR-2	7/20/11	Total	483	<0.50	0.68	49.9	<0.30	<0.20	27100	0.78	1.4	639	0.72	4480	41.4	<0.20	1.4	721	0.5	-	1680	<0.10	1.8	6.1	63.7	86000	122	31.0	<0.0050	121	34.3	8.4	20.3	0.291	3.67						
DR-2 D	7/20/11	Dissolved	27.6	<0.50	<0.50	44.4	<1.0	<0.080	27900	<2.5	0.72	<250	<0.10	4250	33.9	<0.20	1.0	590	<0.50	<0.50	1720	<0.10	<0.50	<5.0	<20.0	<71.0	<0.0050	915	18.0	<0.0050	712	555	6.99	20.6	1.066	2.09					
<b>DR-3: St. Louis tunnel discharge at adit</b>																																									
DR-3	7/20/11	Total	416	<0.50	0.52	20.3	0.52	31.5	223000	<0.50	52.7	4490	1.4	20200	3190	<0.20	9.4	1570	<0.50	-	8740	<0.10	<0.10	6180	<0.10	71.0	639000	915	18.0	<0.0050	712	555	6.99	20.6	1.066	2.09					
DR-3 D	7/20/11	Dissolved	-	<0.50	<0.50	19.4	<1.0	29.8	<0.50	13.5	1570	<0.10	20900	-	<0.20	9.8	1540	<0.50	<0.50	-	<0.10	<0.50	<5.0	<20.0	<71.0	<0.0050	706	556	7.51	24.4	1.076	2.47									
<b>DR-4: Discharge of Pond 15</b>																																									
DR-4	7/20/11	Total	270	<0.50	<0.50	20.4	0.40	30.1	220000	<0.50	34.1	2810	0.88	20500	3140	<0.20	9.3	1600	<0.50	-	8860	<0.10	<0.10	5840	<0.10	71.0	634000	880	13.0	0.0066	706	556	7.51	24.4	1.076	2.47					
DR-4 D	7/20/11	Dissolved	<20.0	<0.50	<0.50	18.8	<1.0	26.1	198000	<2.5	3.0	<250	<0.10	20800	2970	<0.20	9.3	1560	<0.50	<0.50	8480	<0.10	<0.50	5000	<0.10	<20.0	<71.0	<0.0050	706	556	7.51	24.4	1.076	2.47							
<b>DR-5: Discharge of Pond 8</b>																																									
DR-5	7/20/11	Total	119	<0.50	<0.50	20.0	0.20	26.2	227000	<0.50	16.1	1180	0.38	21200	2990	<0.20	9.4	1730	<0.50	-	9100	<0.10	<0.10	5010	<0.10	80.1	655000	955	10.0	<0.0050	735	577	7.63	24.6	1.038	1.56					
DR-5 D	7/20/11	Dissolved	<20.0	<0.50	<0.50	19.0	<1.0	24.3	207000	<2.5	2.7	<250	<0.10	22200	2860	<0.20	9.2	1720	<0.50	<0.50	8920	<0.10	<0.50	4410	<0.10	<20.0	<71.0	<0.0050	746	558	7.28	25.4	1.148	2.17							
<b>DR-6: St. Louis settling pond system outfall to the Delores River (Outfall 002)</b>																																									
DR-6	7/20/11	Total	51.6	<0.50	<0.50	21.4	<0.20	23.5	238000	<0.50	6.9	457	0.28	25900	2700	<0.20	8.4	2340	<0.50	-	11000	<0.10	<0.10	4280	<0.10	69.2	700000	993	9.0	<0.0050	746	558	7.28	25.4	1.148	2.17					
DR-6 D	7/20/11	Dissolved	<20.0	<0.50	<0.50	21.2	<1.0	23.4	228000	<2.5	2.7	<250	<0.10	25200	2760	<0.20	8.9	2350	<0.50	<0.50	11000	<0.10	<0.50	4420	<0.10	<20.0	<71.0	<0.0050	746	558	7.28	25.4	1.148	2.17							
<b>DR-7: Delores River below St. Louis settling pond system outfall</b>																																									
DR-7	7/20/11	Total	261	<0.50	0.84	47.6	<0.20	1.5</td																																	

Rico Colorado Surface Water Sampling QC Results - July 2011 Sampling

TABLE 6 - Method Blank

Description	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness	TDS	TSS	Cyanide	Sulfate
QC Sample	MB-1022733	MB-1023928	MB-1022733	MB-1022733	MB-1022733	-	MB-1022733	MB-1022733	MB-1022733	MB-1022733	MB-853143	-	MB-850478	MB-850475	MB-851963	MB-853321												
Units	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L																						
Date	8/7/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/6/2011	8/1/2011	7/27/2011	7/27/2011	7/29/2011	8/2/2011		
Time	12:20	17:07	17:07	17:07	17:07	17:07	17:07	17:07	17:07	17:07	17:07	17:07	10:01	17:07	17:07	17:07	-	17:07	17:07	17:07	17:07	12:00	-	9:35	12:52	19:18	17:05	
Result	ND	-	ND	ND	ND	ND																						
RL	4.0	0.50	0.50	0.30	0.20	0.080	20.0	0.50	0.50	50.0	0.10	5.0	0.50	0.20	0.50	20.0	0.50	-	50.0	0.10	0.10	5.0	20.0	-	5.0	5.0	0.0050	1.0
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Dissolved</b>																												
QC Sample	MB-1001531	MB-1022189	MB-1001531	-	-	-	-																					
Units	µg/L	-	-	-	-	-																						
Date	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/5/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	8/3/2011	-	-	-	-
Time	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	18:34	11:05	18:34	18:34	18:34	18:34	18:34	-	-	-	-		
Result	ND	-	-	-	-																							
RL	4.0	0.50	0.50	0.30	0.20	0.080	20.0	0.50	0.50	50.0	0.10	5.0	0.50	0.20	0.50	20.0	0.50	-	50.0	0.10	0.10	5.0	-	-	-	-		
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Sample Duplicate</b>																												
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-850479	SD-850476	-	-
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	mg/L	-	-
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1090	43	-	-
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1140	42	-	-
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2	-	-
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	25	-	-
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Sample Duplicate</b>																												
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-850480	SD-850477	-	-
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	mg/L	-	-
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	880	ND	-	-
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	965	ND	-	-
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	25	-	-
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

**DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate.

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

Rico Colorado Surface Water Sampling QC Results - July 2011 Sampling

TABLE 7 - Laboratory Control Sample

Description	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness	TDS	TSS	Cyanide	Sulfate	
QC Sample	LCS-1022734	-	-	-	-	-	-	-	-	LCS-851964	LCS-853322																		
Units	µg/L	mg/L	mg/L	mg/L	mg/L																								
Spike Conc.	80	80	80	80	80	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000		
LCS Result	80.9	77.3	77.8	78.3	77.7	79	1070	80.1	991	80.9	1020	79.1	4.9	78.1	997	80.4	-	1010	84.6	78.2	77.7	455	-	-	-	0.1	5		
LCS % Rec	101	97	97	98	97	99	107	100	98	99	101	102	99	98	98	100	101	-	106	98	97	91	-	-	-	97	100		
% Rec Limits	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	90-110	90-110			
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Dissolved</b>																													
QC Sample	LCS-1022748	-	-	-																									
Units	µg/L	µg/L	µg/L	µg/L	µg/L																								
Spike Conc.	80	80	80	80	80	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	
LCS Result	85.8	80.7	82.8	79.2	79.4	82.4	1060	82.9	87	1030	81.2	1080	81.0	5.2	86.8	1070	83.7	83.9	1090	84	82.5	84.1	-	-	-	-	-	-	-
LCS % Rec	107	101	103	99	99	103	106	104	109	103	101	108	101	104	108	107	105	105	109	105	103	105	-	-	-	-	-	-	-
% Rec Limits	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Sample Duplicate</b>																													
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Sample Duplicate</b>																													
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**DEFINITIONS**  
DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution or the sample aliquot, or moisture content.  
ND - Not Detected at or above adjusted reporting limit.  
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.  
MDL - Adjusted Method Detection Limit.  
S - Surrogate.  
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.  
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.  
LCS(D) - Laboratory Control Sample (Duplicate)  
MS(D) - Matrix Spike (Duplicate)  
DUP - Sample Duplicate  
RPD - Relative Percent Difference  
NC - Not Calculable.  
SG - Silica Gel - Clean-Up  
U - Indicates the compound was analyzed for, but not detected.  
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.  
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.  
**LABORATORIES**  
PASI-K Pace Analytical Services - Kansas City  
PASI-M Pace Analytical Services - Minneapolis  
**ANALYTE QUALIFIERS**  
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.





Rico Colorado Surface Water Sampling QC Results - July 2011 Sampling

TABLE 9 - Matrix Spike Sample

Description	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness	TDS	TSS	Cyanide	Sulfate	
QC Sample	MSS-1022737	-	MSS-1022737	MSS-1022737	MSS-1022737	MSS-1022737	-	-	-	-	MSS-851965	MSS-853325																	
Units	µg/L	-	µg/L	µg/L	µg/L	µg/L	-	-	-	-	mg/L	mg/L																	
Original Result	254	ND	0.57	61.6	ND	0.35	38600	0.62	1.3	359	0.63	5200	59.7	<0.037	1.1	767	ND	-	2050	ND	1.1	60.5	-	-	-	-	ND	41.6	
Spike Conc.	80	80	80	80	80	1000	80	80	1000	80	1000	80	80	5	80	1000	80	-	1000	80	80	-	-	-	-	0.1	25		
MSS Result	947	71.4	79.4	141	76.9	78.8	38900	77.8	78.2	1520	79.6	6480	138	5.0	78.2	1880	80.2	-	3100	81.4	80.4	143	-	-	-	-	0.097	69.5	
MSS % Rec	866	89	99	100	96	98	31	96	96	117	99	128	98	100	96	112	100	-	105	102	99	103	-	-	-	-	97	111	
% Rec Limits	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	-	70-130	70-130	70-130	70-130	-	-	-	-	41-136	61-119	
Qualifiers	M1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Dissolved</b>																													
QC Sample	MSS-1022751	-	-	-	-	-	-																						
Units	µg/L	µg/L	-	-	-	-	-	-																					
Original Result	19.1	ND	ND	49.8	ND	0.49	42900	ND	1.3	ND	ND	5120	85.8	ND	1.2	727	ND	ND	2160	ND	0.17	81.7	-	-	-	-	-	-	
Spike Conc.	80	80	80	80	80	1000	80	80	1000	80	1000	80	5	80	1000	80	80	1000	80	80	80	-	-	-	-	-	-	-	
MSS Result	107.0	81.8	83.4	129	84.4	83.6	43800	82.1	84.7	1050	82.0	6200	169	5.3	85	1770	89.6	76.4	3190	82.8	84	169	-	-	-	-	-	-	
MSS % Rec	110	102	104	99	105	104	85	102	104	103	102	108	104	106	105	104	112	95	103	103	105	109	-	-	-	-	-	-	
% Rec Limits	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	-	-	-	-	-	-	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Sample Duplicate</b>																													
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-851966	-		
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	-	
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-	
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**DEFINITIONS**  
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ND - Not Detected at or above adjusted reporting limit.  
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.  
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1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.  
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.  
LCS(D) - Laboratory Control Sample (Duplicate)  
MS(D) - Matrix Spike (Duplicate)  
DUP - Sample Duplicate  
RPD - Relative Percent Difference  
NC - Not Calculable.  
SG - Silica Gel - Clean-Up  
U - Indicates the compound was analyzed for, but not detected.  
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.  
Pace Analytical is TN accredited. Contact your Pace PM for the current list of accredited analytes.  
**LABORATORIES**  
PASI-K Pace Analytical Services - Kansas City  
PASI-M Pace Analytical Services - Minneapolis  
**ANALYTE QUALIFIERS**  
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



**Appendix C**

**Project Narrative and Laboratory Analytical Reports**

August 10, 2011

Mark DeFriez  
Anderson Engineering Company I  
977 W 2100 S.  
Salt Lake City, UT 84119

RE: Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

Dear Mark DeFriez:

Enclosed are the analytical results for sample(s) received by the laboratory on July 26, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Colleen Koporc

colleen.koporc@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

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## CERTIFICATIONS

Project: RICO SW SAMPLING JULY 2011  
 Pace Project No.: 60103165

### Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414  
 A2LA Certification #: 2926.01  
 Alaska Certification #: UST-078  
 Alaska Certification #MN00064  
 Arizona Certification #: AZ-0014  
 Arkansas Certification #: 88-0680  
 California Certification #: 01155CA  
 EPA Region 8 Certification #: Pace  
 Florida/NELAP Certification #: E87605  
 Georgia Certification #: 959  
 Idaho Certification #: MN00064  
 Illinois Certification #: 200011  
 Iowa Certification #: 368  
 Kansas Certification #: E-10167  
 Louisiana Certification #: 03086  
 Louisiana Certification #: LA080009  
 Maine Certification #: 2007029  
 Maryland Certification #: 322  
 Michigan DEQ Certification #: 9909  
 Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace  
 Montana Certification #: MT CERT0092  
 Nebraska Certification #: Pace  
 Nevada Certification #: MN\_00064  
 New Jersey Certification #: MN-002  
 New Mexico Certification #: Pace  
 New York Certification #: 11647  
 North Carolina Certification #: 530  
 North Dakota Certification #: R-036  
 North Dakota Certification #: R-036A  
 Ohio VAP Certification #: CL101  
 Oklahoma Certification #: D9921  
 Oklahoma Certification #: 9507  
 Oregon Certification #: MN200001  
 Pennsylvania Certification #: 68-00563  
 Puerto Rico Certification  
 Tennessee Certification #: 02818  
 Texas Certification #: T104704192  
 Washington Certification #: C754  
 Wisconsin Certification #: 999407970

### Montana Certification IDs

602 South 25th Street, Billings, MT 59101  
 EPA Region 8 Certification #: 8TMS-Q  
 Idaho Certification #: MT00012

Montana Certification #: MT CERT0040  
 NVLAP Certification #: 101292-0  
 Minnesota Dept of Health Certification #: 030-999-442

### Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219  
 A2LA Certification #: 2456.01  
 Arkansas Certification #: 05-008-0  
 Illinois Certification #: 001191  
 Iowa Certification #: 118  
 Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055  
 Nevada Certification #: KS000212008A  
 Oklahoma Certification #: 9205/9935  
 Texas Certification #: T104704407-08-TX  
 Utah Certification #: 9135995665

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60103165001	DR-1	Water	07/20/11 00:00	07/26/11 08:45
60103165002	DR-2	Water	07/20/11 00:00	07/26/11 08:45
60103165003	DR-3	Water	07/20/11 00:00	07/26/11 08:45
60103165004	DR-4	Water	07/20/11 00:00	07/26/11 08:45
60103165005	DR-5	Water	07/20/11 00:00	07/26/11 08:45
60103165006	DR-6	Water	07/20/11 00:00	07/26/11 08:45
60103165007	DR-7	Water	07/20/11 00:00	07/26/11 08:45
60103165008	DR-8	Water	07/20/11 00:00	07/26/11 08:45
60103165009	DR-4-SW	Water	07/20/11 00:00	07/26/11 08:45
60103165010	DR-G	Water	07/20/11 00:00	07/26/11 08:45
60103165011	FB	Water	07/20/11 00:00	07/26/11 08:45

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60103165001	DR-1	EPA 200.8	TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
60103165002	DR-2	SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	CJS, TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
60103165003	DR-3	EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	TL1	21	PASI-M
		EPA 200.8	TL1	16	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
60103165004	DR-4	SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M

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## SAMPLE ANALYTE COUNT

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60103165005	DR-5	SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
60103165006	DR-6	SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
60103165007	DR-7	SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K

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## SAMPLE ANALYTE COUNT

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60103165008	DR-8	SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	CJS, TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
60103165009	DR-4-SW	EPA 200.8	CJS, TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	TL1	21	PASI-M
60103165010	DR-G	EPA 200.8	TL1	21	PASI-M
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 200.8	TL1	21	PASI-M
60103165011	FB	EPA 200.8	TL1	21	PASI-M

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## SAMPLE ANALYTE COUNT

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	TL1	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	BDM	3	PASI-K
		SM 2540C	LAJ	1	PASI-K
		SM 2540D	LAJ	1	PASI-K
		EPA 300.0	JML	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-1	Lab ID: 60103165001	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>563</b> ug/L		4.0	1	08/01/11 18:00	08/06/11 17:11	7429-90-5	M1
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:11	7440-36-0	
Arsenic	<b>0.83</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:11	7440-38-2	
Barium	<b>51.0</b> ug/L		0.30	1	08/01/11 18:00	08/06/11 17:11	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 17:11	7440-41-7	
Cadmium	<b>0.085</b> ug/L		0.080	1	08/01/11 18:00	08/06/11 17:11	7440-43-9	
Calcium	<b>29000</b> ug/L		100	5	08/01/11 18:00	08/06/11 17:14	7440-70-2	M1
Chromium	<b>0.85</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:11	7440-47-3	
Copper	<b>1.9</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:11	7440-50-8	
Iron	<b>759</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 17:11	7439-89-6	
Lead	<b>1.0</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 17:11	7439-92-1	
Magnesium	<b>4510</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 17:11	7439-95-4	
Manganese	<b>20.8</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:11	7439-96-5	
Nickel	<b>1.6</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:11	7440-02-0	
Potassium	<b>720</b> ug/L		20.0	1	08/01/11 18:00	08/06/11 17:11	7440-09-7	
Selenium	<b>0.56</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:11	7782-49-2	
Sodium	<b>1620</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 17:11	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 17:11	7440-28-0	
Total Hardness by 2340B	<b>90900</b> ug/L		355	5	08/01/11 18:00	08/06/11 17:14		
Vanadium	<b>2.2</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 17:11	7440-62-2	
Zinc	<b>5.2</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 17:11	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	<b>24.3</b> ug/L		4.0	1	08/01/11 09:10	08/03/11 18:47	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7440-38-2	
Barium, Dissolved	<b>42.9</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 18:47	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/01/11 09:10	08/03/11 18:47	7440-41-7	
Cadmium, Dissolved	ND ug/L		0.080	1	08/01/11 09:10	08/03/11 18:47	7440-43-9	
Calcium, Dissolved	<b>24600</b> ug/L		100	5	08/01/11 09:10	08/04/11 12:42	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7440-47-3	
Copper, Dissolved	<b>0.63</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/01/11 09:10	08/03/11 18:47	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 18:47	7439-92-1	
Magnesium, Dissolved	<b>3920</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 18:47	7439-95-4	
Manganese, Dissolved	<b>7.8</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7439-96-5	
Nickel, Dissolved	<b>0.53</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7440-02-0	
Potassium, Dissolved	<b>530</b> ug/L		20.0	1	08/01/11 09:10	08/03/11 18:47	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:47	7440-22-4	
Sodium, Dissolved	<b>1670</b> ug/L		50.0	1	08/01/11 09:10	08/03/11 18:47	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 18:47	7440-28-0	
Vanadium, Dissolved	<b>0.21</b> ug/L		0.10	1	08/01/11 09:10	08/03/11 18:47	7440-62-2	
Zinc, Dissolved	ND ug/L		5.0	1	08/01/11 09:10	08/03/11 18:47	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-1	Lab ID: 60103165001	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 13:55	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 13:57	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	178	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	114	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.087	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	60.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	60.1	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	114	mg/L	5.0	1		07/27/11 09:37		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	43.0	mg/L	5.0	1		07/27/11 12:52		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	27.5	mg/L	5.0	5		08/02/11 18:12	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:21	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-2	Lab ID: 60103165002	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>483</b> ug/L		4.0	1	08/01/11 18:00	08/06/11 17:18	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:18	7440-36-0	
Arsenic	<b>0.68</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:18	7440-38-2	
Barium	<b>49.9</b> ug/L		0.30	1	08/01/11 18:00	08/06/11 17:18	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 17:18	7440-41-7	
Cadmium	ND ug/L		0.080	1	08/01/11 18:00	08/06/11 17:18	7440-43-9	
Calcium	<b>27100</b> ug/L		100	5	08/01/11 18:00	08/07/11 12:24	7440-70-2	
Chromium	<b>0.78</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:18	7440-47-3	
Copper	<b>1.4</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:18	7440-50-8	
Iron	<b>639</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 17:18	7439-89-6	
Lead	<b>0.72</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 17:18	7439-92-1	
Magnesium	<b>4480</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 17:18	7439-95-4	
Manganese	<b>41.4</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:18	7439-96-5	
Nickel	<b>1.4</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:18	7440-02-0	
Potassium	<b>721</b> ug/L		20.0	1	08/01/11 18:00	08/06/11 17:18	7440-09-7	
Selenium	<b>0.50</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:18	7782-49-2	
Sodium	<b>1680</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 17:18	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 17:18	7440-28-0	
Total Hardness by 2340B	<b>86000</b> ug/L		355	5	08/01/11 18:00	08/07/11 12:24		
Vanadium	<b>1.8</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 17:18	7440-62-2	
Zinc	<b>6.1</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 17:18	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	<b>27.6</b> ug/L		20.0	5	08/01/11 09:10	08/04/11 12:49	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:50	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:50	7440-38-2	
Barium, Dissolved	<b>44.4</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 18:50	7440-39-3	
Beryllium, Dissolved	ND ug/L		1.0	5	08/01/11 09:10	08/04/11 12:49	7440-41-7	
Cadmium, Dissolved	ND ug/L		0.080	1	08/01/11 09:10	08/03/11 18:50	7440-43-9	
Calcium, Dissolved	<b>27900</b> ug/L		100	5	08/01/11 09:10	08/04/11 12:49	7440-70-2	
Chromium, Dissolved	ND ug/L		2.5	5	08/01/11 09:10	08/04/11 12:49	7440-47-3	
Copper, Dissolved	<b>0.72</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 18:50	7440-50-8	
Iron, Dissolved	ND ug/L		250	5	08/01/11 09:10	08/04/11 12:49	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 18:50	7439-92-1	
Magnesium, Dissolved	<b>4250</b> ug/L		25.0	5	08/01/11 09:10	08/04/11 12:49	7439-95-4	
Manganese, Dissolved	<b>33.9</b> ug/L		2.5	5	08/01/11 09:10	08/04/11 12:49	7439-96-5	
Nickel, Dissolved	<b>1.0</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 18:50	7440-02-0	
Potassium, Dissolved	<b>590</b> ug/L		100	5	08/01/11 09:10	08/04/11 12:49	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:50	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:50	7440-22-4	
Sodium, Dissolved	<b>1720</b> ug/L		250	5	08/01/11 09:10	08/04/11 12:49	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 18:50	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.50	5	08/01/11 09:10	08/04/11 12:49	7440-62-2	
Zinc, Dissolved	ND ug/L		5.0	1	08/01/11 09:10	08/03/11 18:50	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-2	Lab ID: 60103165002	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 10:28	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 11:36	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	189	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	121	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.092	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	64.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	63.7	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	122	mg/L	5.0	1		07/27/11 09:38		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	31.0	mg/L	5.0	1		07/27/11 12:53		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	34.3	mg/L	5.0	5		08/02/11 19:01	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:22	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-3	Lab ID: 60103165003	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	416 ug/L		4.0	1	08/01/11 18:00	08/06/11 17:21	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:21	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:21	7440-38-2	
Barium	20.3 ug/L		0.30	1	08/01/11 18:00	08/06/11 17:21	7440-39-3	
Beryllium	0.52 ug/L		0.20	1	08/01/11 18:00	08/06/11 17:21	7440-41-7	
Cadmium	31.5 ug/L		0.080	1	08/01/11 18:00	08/06/11 17:21	7440-43-9	
Calcium	223000 ug/L		1000	50	08/01/11 18:00	08/06/11 17:24	7440-70-2	
Chromium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:21	7440-47-3	
Copper	52.7 ug/L		0.50	1	08/01/11 18:00	08/06/11 17:21	7440-50-8	
Iron	4490 ug/L		50.0	1	08/01/11 18:00	08/06/11 17:21	7439-89-6	
Lead	1.4 ug/L		0.10	1	08/01/11 18:00	08/06/11 17:21	7439-92-1	
Magnesium	20200 ug/L		5.0	1	08/01/11 18:00	08/06/11 17:21	7439-95-4	
Manganese	3190 ug/L		25.0	50	08/01/11 18:00	08/06/11 17:24	7439-96-5	
Nickel	9.4 ug/L		0.50	1	08/01/11 18:00	08/06/11 17:21	7440-02-0	
Potassium	1570 ug/L		20.0	1	08/01/11 18:00	08/06/11 17:21	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:21	7782-49-2	
Sodium	8740 ug/L		50.0	1	08/01/11 18:00	08/06/11 17:21	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 17:21	7440-28-0	
Total Hardness by 2340B	639000 ug/L		3550	50	08/01/11 18:00	08/06/11 17:24		
Vanadium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 17:21	7440-62-2	
Zinc	6180 ug/L		250	50	08/01/11 18:00	08/06/11 17:24	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:53	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:53	7440-38-2	
Barium, Dissolved	19.4 ug/L		0.30	1	08/01/11 09:10	08/03/11 18:53	7440-39-3	
Beryllium, Dissolved	ND ug/L		1.0	5	08/01/11 09:10	08/04/11 12:56	7440-41-7	
Cadmium, Dissolved	29.8 ug/L		0.080	1	08/01/11 09:10	08/03/11 18:53	7440-43-9	
Chromium, Dissolved	ND ug/L		2.5	5	08/01/11 09:10	08/04/11 12:56	7440-47-3	
Copper, Dissolved	13.5 ug/L		0.50	1	08/01/11 09:10	08/03/11 18:53	7440-50-8	
Iron, Dissolved	1570 ug/L		250	5	08/01/11 09:10	08/04/11 12:56	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 18:53	7439-92-1	
Magnesium, Dissolved	20900 ug/L		25.0	5	08/01/11 09:10	08/04/11 12:56	7439-95-4	
Nickel, Dissolved	9.8 ug/L		0.50	1	08/01/11 09:10	08/03/11 18:53	7440-02-0	
Potassium, Dissolved	1540 ug/L		100	5	08/01/11 09:10	08/04/11 12:56	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:53	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 18:53	7440-22-4	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 18:53	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.50	5	08/01/11 09:10	08/04/11 12:56	7440-62-2	
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND ug/L		0.20	1	08/03/11 16:33	08/05/11 13:56	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND ug/L		0.20	1	08/03/11 16:35	08/05/11 13:58	7439-97-6	

Date: 08/10/2011 04:07 PM

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-3	Lab ID: 60103165003	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	1110	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	712	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.55	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	71.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	71.0	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	915	mg/L	5.0	1		07/27/11 09:38		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	18.0	mg/L	5.0	1		07/27/11 12:53		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	555	mg/L	50.0	50		08/02/11 19:18	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:25	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-4	Lab ID: 60103165004	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>270</b> ug/L		4.0	1	08/01/11 18:00	08/06/11 17:28	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:28	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:28	7440-38-2	
Barium	<b>20.4</b> ug/L		0.30	1	08/01/11 18:00	08/06/11 17:28	7440-39-3	
Beryllium	<b>0.40</b> ug/L		0.20	1	08/01/11 18:00	08/06/11 17:28	7440-41-7	
Cadmium	<b>30.1</b> ug/L		0.080	1	08/01/11 18:00	08/06/11 17:28	7440-43-9	
Calcium	<b>220000</b> ug/L		1000	50	08/01/11 18:00	08/06/11 18:06	7440-70-2	
Chromium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:28	7440-47-3	
Copper	<b>34.1</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:28	7440-50-8	
Iron	<b>2810</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 17:28	7439-89-6	
Lead	<b>0.88</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 17:28	7439-92-1	
Magnesium	<b>20500</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 17:28	7439-95-4	
Manganese	<b>3140</b> ug/L		25.0	50	08/01/11 18:00	08/06/11 18:06	7439-96-5	
Nickel	<b>9.3</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 17:28	7440-02-0	
Potassium	<b>1600</b> ug/L		20.0	1	08/01/11 18:00	08/06/11 17:28	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 17:28	7782-49-2	
Sodium	<b>8860</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 17:28	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 17:28	7440-28-0	
Total Hardness by 2340B	<b>634000</b> ug/L		3550	50	08/01/11 18:00	08/06/11 18:06		
Vanadium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 17:28	7440-62-2	
Zinc	<b>5840</b> ug/L		250	50	08/01/11 18:00	08/06/11 18:06	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	ND ug/L		20.0	5	08/01/11 09:10	08/04/11 13:03	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:19	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:19	7440-38-2	
Barium, Dissolved	<b>18.8</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 19:19	7440-39-3	
Beryllium, Dissolved	ND ug/L		1.0	5	08/01/11 09:10	08/04/11 13:03	7440-41-7	
Cadmium, Dissolved	<b>26.1</b> ug/L		0.080	1	08/01/11 09:10	08/03/11 19:19	7440-43-9	
Calcium, Dissolved	<b>198000</b> ug/L		1000	50	08/01/11 09:10	08/04/11 13:07	7440-70-2	
Chromium, Dissolved	ND ug/L		2.5	5	08/01/11 09:10	08/04/11 13:03	7440-47-3	
Copper, Dissolved	<b>3.0</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:19	7440-50-8	
Iron, Dissolved	ND ug/L		250	5	08/01/11 09:10	08/04/11 13:03	7439-89-6	
Lead, Dissolved	<b>0.13</b> ug/L		0.10	1	08/01/11 09:10	08/03/11 19:19	7439-92-1	
Magnesium, Dissolved	<b>20800</b> ug/L		25.0	5	08/01/11 09:10	08/04/11 13:03	7439-95-4	
Manganese, Dissolved	<b>2970</b> ug/L		25.0	50	08/01/11 09:10	08/04/11 13:07	7439-96-5	
Nickel, Dissolved	<b>9.3</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:19	7440-02-0	
Potassium, Dissolved	<b>1560</b> ug/L		100	5	08/01/11 09:10	08/04/11 13:03	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:19	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:19	7440-22-4	
Sodium, Dissolved	<b>8480</b> ug/L		250	5	08/01/11 09:10	08/04/11 13:03	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:19	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.50	5	08/01/11 09:10	08/04/11 13:03	7440-62-2	
Zinc, Dissolved	<b>5000</b> ug/L		250	50	08/01/11 09:10	08/03/11 19:22	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-4	Lab ID: 60103165004	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 10:32	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 11:40	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	1100	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	706	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.55	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	71.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	71.0	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	880	mg/L	5.0	1		07/27/11 09:38		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	13.0	mg/L	5.0	1		07/27/11 12:53		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	556	mg/L	50.0	50		08/02/11 19:34	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	0.0066	mg/L	0.0050	1		07/29/11 19:26	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-5	Lab ID: 60103165005	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	119 ug/L		4.0	1	08/01/11 18:00	08/06/11 18:09	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:09	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:09	7440-38-2	
Barium	20.0 ug/L		0.30	1	08/01/11 18:00	08/06/11 18:09	7440-39-3	
Beryllium	0.20 ug/L		0.20	1	08/01/11 18:00	08/06/11 18:09	7440-41-7	
Cadmium	26.2 ug/L		0.080	1	08/01/11 18:00	08/06/11 18:09	7440-43-9	
Calcium	227000 ug/L		1000	50	08/01/11 18:00	08/06/11 18:12	7440-70-2	
Chromium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:09	7440-47-3	
Copper	16.1 ug/L		0.50	1	08/01/11 18:00	08/06/11 18:09	7440-50-8	
Iron	1180 ug/L		50.0	1	08/01/11 18:00	08/06/11 18:09	7439-89-6	
Lead	0.38 ug/L		0.10	1	08/01/11 18:00	08/06/11 18:09	7439-92-1	
Magnesium	21200 ug/L		5.0	1	08/01/11 18:00	08/06/11 18:09	7439-95-4	
Manganese	2990 ug/L		25.0	50	08/01/11 18:00	08/06/11 18:12	7439-96-5	
Nickel	9.4 ug/L		0.50	1	08/01/11 18:00	08/06/11 18:09	7440-02-0	
Potassium	1730 ug/L		20.0	1	08/01/11 18:00	08/06/11 18:09	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:09	7782-49-2	
Sodium	9100 ug/L		50.0	1	08/01/11 18:00	08/06/11 18:09	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:09	7440-28-0	
Total Hardness by 2340B	655000 ug/L		3550	50	08/01/11 18:00	08/06/11 18:12		
Vanadium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:09	7440-62-2	
Zinc	5010 ug/L		250	50	08/01/11 18:00	08/06/11 18:12	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	ND ug/L		20.0	5	08/01/11 09:10	08/04/11 13:10	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:25	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:25	7440-38-2	
Barium, Dissolved	19.0 ug/L		0.30	1	08/01/11 09:10	08/03/11 19:25	7440-39-3	
Beryllium, Dissolved	ND ug/L		1.0	5	08/01/11 09:10	08/04/11 13:10	7440-41-7	
Cadmium, Dissolved	24.3 ug/L		0.080	1	08/01/11 09:10	08/03/11 19:25	7440-43-9	
Calcium, Dissolved	207000 ug/L		1000	50	08/01/11 09:10	08/04/11 13:14	7440-70-2	
Chromium, Dissolved	ND ug/L		2.5	5	08/01/11 09:10	08/04/11 13:10	7440-47-3	
Copper, Dissolved	2.7 ug/L		0.50	1	08/01/11 09:10	08/03/11 19:25	7440-50-8	
Iron, Dissolved	ND ug/L		250	5	08/01/11 09:10	08/04/11 13:10	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:25	7439-92-1	
Magnesium, Dissolved	22200 ug/L		25.0	5	08/01/11 09:10	08/04/11 13:10	7439-95-4	
Manganese, Dissolved	2860 ug/L		25.0	50	08/01/11 09:10	08/04/11 13:14	7439-96-5	
Nickel, Dissolved	9.2 ug/L		0.50	1	08/01/11 09:10	08/03/11 19:25	7440-02-0	
Potassium, Dissolved	1720 ug/L		100	5	08/01/11 09:10	08/04/11 13:10	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:25	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:25	7440-22-4	
Sodium, Dissolved	8920 ug/L		250	5	08/01/11 09:10	08/04/11 13:10	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:25	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.50	5	08/01/11 09:10	08/04/11 13:10	7440-62-2	
Zinc, Dissolved	4410 ug/L		250	50	08/01/11 09:10	08/03/11 19:29	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-5	Lab ID: 60103165005	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 10:38	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 11:42	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	1150	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	735	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.57	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	80.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	80.1	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	955	mg/L	5.0	1		07/27/11 09:39		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	10	mg/L	5.0	1		07/27/11 12:53		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	577	mg/L	50.0	50		08/02/11 19:51	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:30	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-6	Lab ID: 60103165006	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>51.6</b> ug/L		4.0	1	08/01/11 18:00	08/06/11 18:16	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:16	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:16	7440-38-2	
Barium	<b>21.4</b> ug/L		0.30	1	08/01/11 18:00	08/06/11 18:16	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 18:16	7440-41-7	
Cadmium	<b>23.5</b> ug/L		0.080	1	08/01/11 18:00	08/06/11 18:16	7440-43-9	
Calcium	<b>238000</b> ug/L		1000	50	08/01/11 18:00	08/06/11 18:19	7440-70-2	
Chromium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:16	7440-47-3	
Copper	<b>6.9</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:16	7440-50-8	
Iron	<b>457</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:16	7439-89-6	
Lead	<b>0.28</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 18:16	7439-92-1	
Magnesium	<b>25900</b> ug/L		250	50	08/01/11 18:00	08/06/11 18:19	7439-95-4	
Manganese	<b>2700</b> ug/L		25.0	50	08/01/11 18:00	08/06/11 18:19	7439-96-5	
Nickel	<b>8.4</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:16	7440-02-0	
Potassium	<b>2340</b> ug/L		20.0	1	08/01/11 18:00	08/06/11 18:16	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:16	7782-49-2	
Sodium	<b>11000</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:16	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:16	7440-28-0	
Total Hardness by 2340B	<b>700000</b> ug/L		3550	50	08/01/11 18:00	08/06/11 18:19		
Vanadium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:16	7440-62-2	
Zinc	<b>4280</b> ug/L		250	50	08/01/11 18:00	08/06/11 18:19	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	ND ug/L		20.0	5	08/01/11 09:10	08/04/11 12:11	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:32	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:32	7440-38-2	
Barium, Dissolved	<b>21.2</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 19:32	7440-39-3	
Beryllium, Dissolved	ND ug/L		1.0	5	08/01/11 09:10	08/04/11 12:11	7440-41-7	
Cadmium, Dissolved	<b>23.4</b> ug/L		0.080	1	08/01/11 09:10	08/03/11 19:32	7440-43-9	
Calcium, Dissolved	<b>228000</b> ug/L		1000	50	08/01/11 09:10	08/04/11 12:14	7440-70-2	
Chromium, Dissolved	ND ug/L		2.5	5	08/01/11 09:10	08/04/11 12:11	7440-47-3	
Copper, Dissolved	<b>2.7</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:32	7440-50-8	
Iron, Dissolved	ND ug/L		250	5	08/01/11 09:10	08/04/11 12:11	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:32	7439-92-1	
Magnesium, Dissolved	<b>25200</b> ug/L		25.0	5	08/01/11 09:10	08/04/11 12:11	7439-95-4	
Manganese, Dissolved	<b>2760</b> ug/L		25.0	50	08/01/11 09:10	08/04/11 12:14	7439-96-5	
Nickel, Dissolved	<b>8.9</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:32	7440-02-0	
Potassium, Dissolved	<b>2350</b> ug/L		100	5	08/01/11 09:10	08/04/11 12:11	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:32	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:32	7440-22-4	
Sodium, Dissolved	<b>11000</b> ug/L		250	5	08/01/11 09:10	08/04/11 12:11	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:32	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.50	5	08/01/11 09:10	08/04/11 12:11	7440-62-2	
Zinc, Dissolved	<b>4420</b> ug/L		250	50	08/01/11 09:10	08/03/11 19:35	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-6	Lab ID: 60103165006	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 10:40	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 11:55	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	1160	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	746	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.58	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	69.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	69.2	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	993	mg/L	5.0	1		07/27/11 09:39		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	9.0	mg/L	5.0	1		07/27/11 12:54		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	558	mg/L	50.0	50		08/04/11 04:43	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:31	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-7	Lab ID: 60103165007	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>261</b> ug/L		4.0	1	08/01/11 18:00	08/06/11 18:22	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:22	7440-36-0	
Arsenic	<b>0.84</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:22	7440-38-2	
Barium	<b>47.6</b> ug/L		0.30	1	08/01/11 18:00	08/06/11 18:22	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 18:22	7440-41-7	
Cadmium	<b>1.5</b> ug/L		0.080	1	08/01/11 18:00	08/06/11 18:22	7440-43-9	
Calcium	<b>49000</b> ug/L		100	5	08/01/11 18:00	08/06/11 18:26	7440-70-2	
Chromium	<b>0.58</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:22	7440-47-3	
Copper	<b>3.0</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:22	7440-50-8	
Iron	<b>518</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:22	7439-89-6	
Lead	<b>0.86</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 18:22	7439-92-1	
Magnesium	<b>6780</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 18:22	7439-95-4	
Manganese	<b>216</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:22	7439-96-5	
Nickel	<b>1.7</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:22	7440-02-0	
Potassium	<b>1130</b> ug/L		20.0	1	08/01/11 18:00	08/06/11 18:22	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:22	7782-49-2	
Sodium	<b>3200</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:22	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:22	7440-28-0	
Total Hardness by 2340B	<b>150000</b> ug/L		355	5	08/01/11 18:00	08/06/11 18:26		
Vanadium	<b>1.1</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 18:22	7440-62-2	
Zinc	<b>243</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 18:22	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	<b>20.0</b> ug/L		4.0	1	08/01/11 09:10	08/03/11 19:38	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7440-38-2	
Barium, Dissolved	<b>46.1</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 19:38	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/01/11 09:10	08/03/11 19:38	7440-41-7	
Cadmium, Dissolved	<b>1.4</b> ug/L		0.080	1	08/01/11 09:10	08/03/11 19:38	7440-43-9	
Calcium, Dissolved	<b>46700</b> ug/L		200	10	08/01/11 09:10	08/04/11 12:18	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7440-47-3	
Copper, Dissolved	<b>0.77</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/01/11 09:10	08/03/11 19:38	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:38	7439-92-1	
Magnesium, Dissolved	<b>6520</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 19:38	7439-95-4	
Manganese, Dissolved	<b>209</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7439-96-5	
Nickel, Dissolved	<b>1.6</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7440-02-0	
Potassium, Dissolved	<b>1100</b> ug/L		20.0	1	08/01/11 09:10	08/03/11 19:38	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:38	7440-22-4	
Sodium, Dissolved	<b>3380</b> ug/L		50.0	1	08/01/11 09:10	08/03/11 19:38	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:38	7440-28-0	
Vanadium, Dissolved	<b>0.18</b> ug/L		0.10	1	08/01/11 09:10	08/03/11 19:38	7440-62-2	
Zinc, Dissolved	<b>242</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 19:38	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-7	Lab ID: 60103165007	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 10:42	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 11:57	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	310	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	199	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.15	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	71.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	71.0	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	217	mg/L	5.0	1		07/27/11 09:39		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	31.0	mg/L	5.0	1		07/27/11 12:54		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	83.1	mg/L	10.0	10		08/02/11 20:24	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:31	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-8	Lab ID: 60103165008	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>421</b> ug/L		8.0	2	08/01/11 18:00	08/07/11 12:27	7429-90-5	
Antimony	ND ug/L		1.0	2	08/01/11 18:00	08/07/11 12:27	7440-36-0	
Arsenic	ND ug/L		1.0	2	08/01/11 18:00	08/07/11 12:27	7440-38-2	
Barium	<b>20.9</b> ug/L		0.60	2	08/01/11 18:00	08/07/11 12:27	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 18:29	7440-41-7	
Cadmium	<b>31.9</b> ug/L		0.16	2	08/01/11 18:00	08/07/11 12:27	7440-43-9	
Calcium	<b>193000</b> ug/L		1000	50	08/01/11 18:00	08/07/11 12:34	7440-70-2	
Chromium	ND ug/L		1.0	2	08/01/11 18:00	08/07/11 12:27	7440-47-3	
Copper	<b>55.0</b> ug/L		1.0	2	08/01/11 18:00	08/07/11 12:27	7440-50-8	
Iron	<b>4750</b> ug/L		100	2	08/01/11 18:00	08/07/11 12:27	7439-89-6	
Lead	<b>1.5</b> ug/L		0.20	2	08/01/11 18:00	08/07/11 12:27	7439-92-1	
Magnesium	<b>21400</b> ug/L		10.0	2	08/01/11 18:00	08/07/11 12:27	7439-95-4	
Manganese	<b>3280</b> ug/L		25.0	50	08/01/11 18:00	08/07/11 12:34	7439-96-5	
Nickel	<b>9.9</b> ug/L		1.0	2	08/01/11 18:00	08/07/11 12:27	7440-02-0	
Potassium	<b>1560</b> ug/L		40.0	2	08/01/11 18:00	08/07/11 12:27	7440-09-7	
Selenium	ND ug/L		1.0	2	08/01/11 18:00	08/07/11 12:27	7782-49-2	
Sodium	<b>8950</b> ug/L		100	2	08/01/11 18:00	08/07/11 12:27	7440-23-5	
Thallium	ND ug/L		0.20	2	08/01/11 18:00	08/07/11 12:27	7440-28-0	
Total Hardness by 2340B	<b>571000</b> ug/L		3550	50	08/01/11 18:00	08/07/11 12:34		
Vanadium	ND ug/L		0.20	2	08/01/11 18:00	08/07/11 12:27	7440-62-2	
Zinc	<b>6250</b> ug/L		250	50	08/01/11 18:00	08/07/11 12:34	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	<b>103</b> ug/L		4.0	1	08/01/11 09:10	08/03/11 19:41	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:41	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:41	7440-38-2	
Barium, Dissolved	<b>19.2</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 19:41	7440-39-3	
Beryllium, Dissolved	ND ug/L		1.0	5	08/01/11 09:10	08/04/11 12:21	7440-41-7	
Cadmium, Dissolved	<b>29.2</b> ug/L		0.080	1	08/01/11 09:10	08/03/11 19:41	7440-43-9	
Calcium, Dissolved	<b>242000</b> ug/L		1000	50	08/01/11 09:10	08/03/11 19:44	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:41	7440-47-3	
Copper, Dissolved	<b>12.5</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:41	7440-50-8	
Iron, Dissolved	<b>1470</b> ug/L		50.0	1	08/01/11 09:10	08/03/11 19:41	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:41	7439-92-1	
Magnesium, Dissolved	<b>19700</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 19:41	7439-95-4	
Manganese, Dissolved	<b>3090</b> ug/L		25.0	50	08/01/11 09:10	08/03/11 19:44	7439-96-5	
Nickel, Dissolved	<b>9.2</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:41	7440-02-0	
Potassium, Dissolved	<b>1530</b> ug/L		20.0	1	08/01/11 09:10	08/03/11 19:41	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:41	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:41	7440-22-4	
Sodium, Dissolved	<b>8600</b> ug/L		50.0	1	08/01/11 09:10	08/03/11 19:41	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:41	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:41	7440-62-2	
Zinc, Dissolved	<b>6100</b> ug/L		250	50	08/01/11 09:10	08/03/11 19:44	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-8	Lab ID: 60103165008	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 10:44	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 11:59	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	1140	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	728	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.56	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	73.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	72.8	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	931	mg/L	5.0	1		07/27/11 09:39		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	18.0	mg/L	5.0	1		07/27/11 12:54		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	543	mg/L	50.0	50		08/02/11 20:40	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:34	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-4-SW	Lab ID: 60103165009	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>384</b> ug/L		4.0	1	08/01/11 18:00	08/06/11 18:36	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:36	7440-36-0	
Arsenic	<b>0.66</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:36	7440-38-2	
Barium	<b>52.6</b> ug/L		0.30	1	08/01/11 18:00	08/06/11 18:36	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 18:36	7440-41-7	
Cadmium	<b>0.53</b> ug/L		0.080	1	08/01/11 18:00	08/06/11 18:36	7440-43-9	
Calcium	<b>34200</b> ug/L		100	5	08/01/11 18:00	08/07/11 12:37	7440-70-2	
Chromium	<b>0.91</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:36	7440-47-3	
Copper	<b>1.5</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:36	7440-50-8	
Iron	<b>526</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:36	7439-89-6	
Lead	<b>0.75</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 18:36	7439-92-1	
Magnesium	<b>5340</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 18:36	7439-95-4	
Manganese	<b>94.1</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:36	7439-96-5	
Nickel	<b>1.5</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:36	7440-02-0	
Potassium	<b>832</b> ug/L		20.0	1	08/01/11 18:00	08/06/11 18:36	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:36	7782-49-2	
Sodium	<b>2080</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:36	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:36	7440-28-0	
Total Hardness by 2340B	<b>107000</b> ug/L		355	5	08/01/11 18:00	08/07/11 12:37		
Vanadium	<b>1.5</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 18:36	7440-62-2	
Zinc	<b>88.9</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 18:36	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	<b>19.1</b> ug/L		4.0	1	08/01/11 09:10	08/03/11 19:57	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7440-38-2	
Barium, Dissolved	<b>49.8</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 19:57	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/01/11 09:10	08/03/11 19:57	7440-41-7	
Cadmium, Dissolved	<b>0.49</b> ug/L		0.080	1	08/01/11 09:10	08/03/11 19:57	7440-43-9	
Calcium, Dissolved	<b>42900</b> ug/L		100	5	08/01/11 09:10	08/03/11 20:01	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7440-47-3	
Copper, Dissolved	<b>1.3</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/01/11 09:10	08/03/11 19:57	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:57	7439-92-1	
Magnesium, Dissolved	<b>5120</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 19:57	7439-95-4	
Manganese, Dissolved	<b>85.8</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7439-96-5	
Nickel, Dissolved	<b>1.2</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7440-02-0	
Potassium, Dissolved	<b>727</b> ug/L		20.0	1	08/01/11 09:10	08/03/11 19:57	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 19:57	7440-22-4	
Sodium, Dissolved	<b>2160</b> ug/L		50.0	1	08/01/11 09:10	08/03/11 19:57	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 19:57	7440-28-0	
Vanadium, Dissolved	<b>0.17</b> ug/L		0.10	1	08/01/11 09:10	08/03/11 19:57	7440-62-2	
Zinc, Dissolved	<b>81.7</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 19:57	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-4-SW	Lab ID: 60103165009	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 10:46	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 12:01	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	243	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	156	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.12	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	75.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	74.6	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	155	mg/L	5.0	1		07/27/11 09:39		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	30.0	mg/L	5.0	1		07/27/11 12:54		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	49.1	mg/L	5.0	5		08/02/11 21:30	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:34	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-G	Lab ID: 60103165010	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	<b>254</b> ug/L		4.0	1	08/01/11 18:00	08/06/11 18:49	7429-90-5	M1
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:49	7440-36-0	
Arsenic	<b>0.57</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:49	7440-38-2	
Barium	<b>61.6</b> ug/L		0.30	1	08/01/11 18:00	08/06/11 18:49	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 18:49	7440-41-7	
Cadmium	<b>0.35</b> ug/L		0.080	1	08/01/11 18:00	08/06/11 18:49	7440-43-9	
Calcium	<b>38600</b> ug/L		100	5	08/01/11 18:00	08/06/11 18:52	7440-70-2	M1
Chromium	<b>0.62</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:49	7440-47-3	
Copper	<b>1.3</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:49	7440-50-8	
Iron	<b>359</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:49	7439-89-6	
Lead	<b>0.63</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 18:49	7439-92-1	
Magnesium	<b>5200</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 18:49	7439-95-4	
Manganese	<b>59.7</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:49	7439-96-5	
Nickel	<b>1.1</b> ug/L		0.50	1	08/01/11 18:00	08/06/11 18:49	7440-02-0	
Potassium	<b>767</b> ug/L		20.0	1	08/01/11 18:00	08/06/11 18:49	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:49	7782-49-2	
Sodium	<b>2050</b> ug/L		50.0	1	08/01/11 18:00	08/06/11 18:49	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:49	7440-28-0	
Total Hardness by 2340B	<b>118000</b> ug/L		355	5	08/01/11 18:00	08/06/11 18:52		
Vanadium	<b>1.1</b> ug/L		0.10	1	08/01/11 18:00	08/06/11 18:49	7440-62-2	
Zinc	<b>60.5</b> ug/L		5.0	1	08/01/11 18:00	08/06/11 18:49	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	<b>17.2</b> ug/L		4.0	1	08/01/11 09:10	08/03/11 20:04	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7440-38-2	
Barium, Dissolved	<b>60.8</b> ug/L		0.30	1	08/01/11 09:10	08/03/11 20:04	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/01/11 09:10	08/03/11 20:04	7440-41-7	
Cadmium, Dissolved	<b>0.32</b> ug/L		0.080	1	08/01/11 09:10	08/03/11 20:04	7440-43-9	
Calcium, Dissolved	<b>36300</b> ug/L		100	5	08/01/11 09:10	08/04/11 13:32	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7440-47-3	
Copper, Dissolved	<b>1.3</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/01/11 09:10	08/03/11 20:04	7439-89-6	
Lead, Dissolved	<b>0.11</b> ug/L		0.10	1	08/01/11 09:10	08/03/11 20:04	7439-92-1	
Magnesium, Dissolved	<b>5180</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 20:04	7439-95-4	
Manganese, Dissolved	<b>51.2</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7439-96-5	
Nickel, Dissolved	<b>0.63</b> ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7440-02-0	
Potassium, Dissolved	<b>724</b> ug/L		20.0	1	08/01/11 09:10	08/03/11 20:04	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:04	7440-22-4	
Sodium, Dissolved	<b>2140</b> ug/L		50.0	1	08/01/11 09:10	08/03/11 20:04	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 20:04	7440-28-0	
Vanadium, Dissolved	<b>0.27</b> ug/L		0.10	1	08/01/11 09:10	08/03/11 20:04	7440-62-2	
Zinc, Dissolved	<b>46.1</b> ug/L		5.0	1	08/01/11 09:10	08/03/11 20:04	7440-66-6	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: DR-G	Lab ID: 60103165010	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 13:56	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 13:58	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	239	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	153	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	0.12	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	78.0	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	78.3	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	160	mg/L	5.0	1		07/27/11 09:40		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	18.0	mg/L	5.0	1		07/27/11 12:55		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	41.6	mg/L	5.0	5		08/02/11 21:46	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:35	57-12-5	

## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: FB	Lab ID: 60103165011	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.8 MET ICPMS</b>	Analytical Method: EPA 200.8							
Aluminum	ND ug/L		4.0	1	08/01/11 18:00	08/06/11 18:56	7429-90-5	
Antimony	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:56	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:56	7440-38-2	
Barium	ND ug/L		0.30	1	08/01/11 18:00	08/06/11 18:56	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/01/11 18:00	08/06/11 18:56	7440-41-7	
Cadmium	ND ug/L		0.080	1	08/01/11 18:00	08/06/11 18:56	7440-43-9	
Calcium	ND ug/L		20.0	1	08/01/11 18:00	08/06/11 18:56	7440-70-2	
Chromium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:56	7440-47-3	
Copper	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:56	7440-50-8	
Iron	ND ug/L		50.0	1	08/01/11 18:00	08/06/11 18:56	7439-89-6	
Lead	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:56	7439-92-1	
Magnesium	ND ug/L		5.0	1	08/01/11 18:00	08/06/11 18:56	7439-95-4	
Manganese	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:56	7439-96-5	
Nickel	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:56	7440-02-0	
Potassium	ND ug/L		20.0	1	08/01/11 18:00	08/06/11 18:56	7440-09-7	
Selenium	ND ug/L		0.50	1	08/01/11 18:00	08/06/11 18:56	7782-49-2	
Sodium	ND ug/L		50.0	1	08/01/11 18:00	08/06/11 18:56	7440-23-5	
Thallium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:56	7440-28-0	
Total Hardness by 2340B	ND ug/L		71.0	1	08/01/11 18:00	08/06/11 18:56		
Vanadium	ND ug/L		0.10	1	08/01/11 18:00	08/06/11 18:56	7440-62-2	
Zinc	ND ug/L		5.0	1	08/01/11 18:00	08/06/11 18:56	7440-66-6	
<b>200.8 MET ICPMS, Dissolved</b>	Analytical Method: EPA 200.8							
Aluminum, Dissolved	ND ug/L		4.0	1	08/01/11 09:10	08/03/11 20:07	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7440-38-2	
Barium, Dissolved	ND ug/L		0.30	1	08/01/11 09:10	08/03/11 20:07	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/01/11 09:10	08/03/11 20:07	7440-41-7	
Cadmium, Dissolved	ND ug/L		0.080	1	08/01/11 09:10	08/03/11 20:07	7440-43-9	
Calcium, Dissolved	23.1 ug/L		20.0	1	08/01/11 09:10	08/03/11 20:07	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7440-47-3	
Copper, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/01/11 09:10	08/03/11 20:07	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 20:07	7439-92-1	
Magnesium, Dissolved	ND ug/L		5.0	1	08/01/11 09:10	08/03/11 20:07	7439-95-4	
Manganese, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7439-96-5	
Nickel, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7440-02-0	
Potassium, Dissolved	ND ug/L		20.0	1	08/01/11 09:10	08/03/11 20:07	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/01/11 09:10	08/03/11 20:07	7440-22-4	
Sodium, Dissolved	ND ug/L		50.0	1	08/01/11 09:10	08/03/11 20:07	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 20:07	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/01/11 09:10	08/03/11 20:07	7440-62-2	
Zinc, Dissolved	ND ug/L		5.0	1	08/01/11 09:10	08/03/11 20:07	7440-66-6	

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## ANALYTICAL RESULTS

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

Sample: FB	Lab ID: 60103165011	Collected: 07/20/11 00:00	Received: 07/26/11 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>7470 Mercury</b>	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/03/11 16:33	08/05/11 13:56	7439-97-6	
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/03/11 16:35	08/05/11 13:58	7439-97-6	
<b>2510B Specific Conductance</b>	Analytical Method: SM 2510B							
Specific Conductance	3200	umhos/cm	10.0	1		08/01/11 14:31		
<b>Salinity</b>	Analytical Method: Calculated							
Salinity (as dissolved solids)	2050	mg/L	6.0	1		08/02/11 15:25		
Salinity (as seawater)	1.7	PSU	0.010	1		08/02/11 15:25		
<b>2320B Alkalinity</b>	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	20.0	1		08/01/11 12:00		
Alkalinity, Total as CaCO3	ND	mg/L	20.0	1		08/01/11 12:00		
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	5.0	1		07/27/11 09:40		
<b>2540D Total Suspended Solids</b>	Analytical Method: SM 2540D							
Total Suspended Solids	ND	mg/L	5.0	1		07/27/11 12:55		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0							
Sulfate	ND	mg/L	1.0	1		08/02/11 22:19	14808-79-8	
<b>4500CNE Cyanide, Total</b>	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		07/29/11 19:35	57-12-5	

**Appendix D**  
**Laboratory QC Results**

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	ICPM/27402	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

METHOD BLANK: 1022733                          Matrix: Water

Associated Lab Samples: 60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007,  
60103165008, 60103165009, 60103165010, 60103165011

Parameter	Units	Blank	Reporting		Qualifiers
		Result	Limit	Analyzed	
Aluminum	ug/L	ND	4.0	08/07/11 12:20	
Antimony	ug/L	ND	0.50	08/06/11 17:07	
Arsenic	ug/L	ND	0.50	08/06/11 17:07	
Barium	ug/L	ND	0.30	08/06/11 17:07	
Beryllium	ug/L	ND	0.20	08/06/11 17:07	
Cadmium	ug/L	ND	0.080	08/06/11 17:07	
Calcium	ug/L	ND	20.0	08/06/11 17:07	
Chromium	ug/L	ND	0.50	08/06/11 17:07	
Copper	ug/L	ND	0.50	08/06/11 17:07	
Iron	ug/L	ND	50.0	08/06/11 17:07	
Lead	ug/L	ND	0.10	08/06/11 17:07	
Magnesium	ug/L	ND	5.0	08/06/11 17:07	
Manganese	ug/L	ND	0.50	08/06/11 17:07	
Nickel	ug/L	ND	0.50	08/06/11 17:07	
Potassium	ug/L	ND	20.0	08/06/11 17:07	
Selenium	ug/L	ND	0.50	08/06/11 17:07	
Sodium	ug/L	ND	50.0	08/06/11 17:07	
Thallium	ug/L	ND	0.10	08/06/11 17:07	
Vanadium	ug/L	ND	0.10	08/06/11 17:07	
Zinc	ug/L	ND	5.0	08/06/11 17:07	

LABORATORY CONTROL SAMPLE: 1022734

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Aluminum	ug/L	80	80.9	101	85-115	
Antimony	ug/L	80	77.3	97	85-115	
Arsenic	ug/L	80	77.8	97	85-115	
Barium	ug/L	80	78.3	98	85-115	
Beryllium	ug/L	80	77.7	97	85-115	
Cadmium	ug/L	80	79.0	99	85-115	
Calcium	ug/L	1000	1070	107	85-115	
Chromium	ug/L	80	80.1	100	85-115	
Copper	ug/L	80	78.2	98	85-115	
Iron	ug/L	1000	991	99	85-115	
Lead	ug/L	80	80.9	101	85-115	
Magnesium	ug/L	1000	1020	102	85-115	
Manganese	ug/L	80	79.1	99	85-115	
Nickel	ug/L	80	78.1	98	85-115	
Potassium	ug/L	1000	997	100	85-115	
Selenium	ug/L	80	80.4	101	85-115	

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## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

LABORATORY CONTROL SAMPLE: 1022734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sodium	ug/L	1000	1010	101	85-115	
Thallium	ug/L	80	84.6	106	85-115	
Vanadium	ug/L	80	78.2	98	85-115	
Zinc	ug/L	80	77.7	97	85-115	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 1022735 1022736

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	RPD	Max Qual
		60103165001	Result	Spike Conc.	MS Result						
Aluminum	ug/L	563	80	80	1300	1470	922	1130	70-130	12	20 M1
Antimony	ug/L	ND	80	80	74.1	73.0	92	91	70-130	1	20
Arsenic	ug/L	0.83	80	80	82.8	80.2	102	99	70-130	3	20
Barium	ug/L	51.0	80	80	132	133	101	103	70-130	1	20
Beryllium	ug/L	ND	80	80	82.1	78.8	103	99	70-130	4	20
Cadmium	ug/L	0.085	80	80	80.8	80.6	101	101	70-130	.4	20
Calcium	ug/L	29000	1000	1000	29500	29900	59	96	70-130	1	20 M1
Chromium	ug/L	0.85	80	80	82.8	83.2	103	103	70-130	.4	20
Copper	ug/L	1.9	80	80	81.0	82.6	99	101	70-130	2	20
Iron	ug/L	759	1000	1000	1920	1980	116	122	70-130	3	20
Lead	ug/L	1.0	80	80	81.2	82.3	100	102	70-130	1	20
Magnesium	ug/L	4510	1000	1000	5610	5690	110	118	70-130	1	20
Manganese	ug/L	20.8	80	80	101	102	101	101	70-130	.5	20
Nickel	ug/L	1.6	80	80	82.0	82.4	100	101	70-130	.5	20
Potassium	ug/L	720	1000	1000	1820	1910	110	119	70-130	5	20
Selenium	ug/L	0.56	80	80	80.8	83.9	100	104	70-130	4	20
Sodium	ug/L	1620	1000	1000	2600	2680	98	106	70-130	3	20
Thallium	ug/L	ND	80	80	81.8	83.0	102	104	70-130	2	20
Vanadium	ug/L	2.2	80	80	85.2	84.6	104	103	70-130	.8	20
Zinc	ug/L	5.2	80	80	84.9	87.4	100	103	70-130	3	20

MATRIX SPIKE SAMPLE: 1022737

Parameter	Units	60103165010		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result						
Aluminum	ug/L	254	80	947	866	70-130	M1	
Antimony	ug/L	ND	80	71.4	89	70-130		
Arsenic	ug/L	0.57	80	79.4	99	70-130		
Barium	ug/L	61.6	80	141	100	70-130		
Beryllium	ug/L	ND	80	76.9	96	70-130		
Cadmium	ug/L	0.35	80	78.8	98	70-130		
Calcium	ug/L	38600	1000	38900	31	70-130	M1	
Chromium	ug/L	0.62	80	77.8	96	70-130		
Copper	ug/L	1.3	80	78.2	96	70-130		
Iron	ug/L	359	1000	1520	117	70-130		
Lead	ug/L	0.63	80	79.6	99	70-130		
Magnesium	ug/L	5200	1000	6480	128	70-130		

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## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

MATRIX SPIKE SAMPLE: 1022737

Parameter	Units	Result	Spike	MS	MS	% Rec	Qualifiers
			Conc.	Result	% Rec	Limits	
Manganese	ug/L	59.7	80	138	98	70-130	
Nickel	ug/L	1.1	80	78.2	96	70-130	
Potassium	ug/L	767	1000	1880	112	70-130	
Selenium	ug/L	ND	80	80.2	100	70-130	
Sodium	ug/L	2050	1000	3100	105	70-130	
Thallium	ug/L	ND	80	81.4	102	70-130	
Vanadium	ug/L	1.1	80	80.4	99	70-130	
Zinc	ug/L	60.5	80	143	103	70-130	

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	ICPM/27404	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET Dissolved
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009		

METHOD BLANK:	1022747	Matrix:	Water
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Aluminum, Dissolved	ug/L	ND	4.0	08/03/11 18:34	
Antimony, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Arsenic, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Barium, Dissolved	ug/L	ND	0.30	08/03/11 18:34	
Beryllium, Dissolved	ug/L	ND	0.20	08/03/11 18:34	
Cadmium, Dissolved	ug/L	ND	0.080	08/03/11 18:34	
Calcium, Dissolved	ug/L	ND	20.0	08/03/11 18:34	
Chromium, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Copper, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Iron, Dissolved	ug/L	ND	50.0	08/03/11 18:34	
Lead, Dissolved	ug/L	ND	0.10	08/03/11 18:34	
Magnesium, Dissolved	ug/L	ND	5.0	08/03/11 18:34	
Manganese, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Nickel, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Potassium, Dissolved	ug/L	ND	20.0	08/03/11 18:34	
Selenium, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Silver, Dissolved	ug/L	ND	0.50	08/03/11 18:34	
Sodium, Dissolved	ug/L	ND	50.0	08/03/11 18:34	
Thallium, Dissolved	ug/L	ND	0.10	08/03/11 18:34	
Vanadium, Dissolved	ug/L	ND	0.10	08/03/11 18:34	
Zinc, Dissolved	ug/L	ND	5.0	08/03/11 18:34	

LABORATORY CONTROL SAMPLE: 1022748

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Aluminum, Dissolved	ug/L	80	85.8	107	85-115	
Antimony, Dissolved	ug/L	80	80.7	101	85-115	
Arsenic, Dissolved	ug/L	80	82.8	103	85-115	
Barium, Dissolved	ug/L	80	79.2	99	85-115	
Beryllium, Dissolved	ug/L	80	79.4	99	85-115	
Cadmium, Dissolved	ug/L	80	82.4	103	85-115	
Calcium, Dissolved	ug/L	1000	1060	106	85-115	
Chromium, Dissolved	ug/L	80	82.9	104	85-115	
Copper, Dissolved	ug/L	80	87.0	109	85-115	
Iron, Dissolved	ug/L	1000	1030	103	85-115	
Lead, Dissolved	ug/L	80	81.2	101	85-115	
Magnesium, Dissolved	ug/L	1000	1080	108	85-115	
Manganese, Dissolved	ug/L	80	81.0	101	85-115	
Nickel, Dissolved	ug/L	80	86.8	108	85-115	
Potassium, Dissolved	ug/L	1000	1070	107	85-115	

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## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

**LABORATORY CONTROL SAMPLE:** 1022748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Selenium, Dissolved	ug/L	80	83.7	105	85-115	
Silver, Dissolved	ug/L	80	83.9	105	85-115	
Sodium, Dissolved	ug/L	1000	1090	109	85-115	
Thallium, Dissolved	ug/L	80	84.0	105	85-115	
Vanadium, Dissolved	ug/L	80	82.5	103	85-115	
Zinc, Dissolved	ug/L	80	84.1	105	85-115	

**MATRIX SPIKE & MATRIX SPIKE DUPLICATE:** 1022749      1022750

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max		
		3050528003	Spiked Result	Spike Conc.	MS Result				RPD	RPD	Qual
Aluminum, Dissolved	ug/L	7.2	80	80	83.6	94.4	95	109	70-130	12	20
Antimony, Dissolved	ug/L	ND	80	80	79.6	82.0	99	102	70-130	3	20
Arsenic, Dissolved	ug/L	2.0	80	80	86.4	86.0	105	105	70-130	.4	20
Barium, Dissolved	ug/L	34.6	80	80	114	117	99	103	70-130	3	20
Beryllium, Dissolved	ug/L	ND	80	80	73.4	75.2	92	94	70-130	2	20
Cadmium, Dissolved	ug/L	1.3	80	80	81.8	83.8	101	103	70-130	2	20
Calcium, Dissolved	ug/L	413000	1000	1000	424000	433000	1040	1960	70-130	2	20 M1
Chromium, Dissolved	ug/L	ND	80	80	81.0	82.4	101	103	70-130	2	20
Copper, Dissolved	ug/L	0.57	80	80	85.3	85.8	106	106	70-130	.5	20
Iron, Dissolved	ug/L	ND	1000	1000	998	996	99	99	70-130	.3	20
Lead, Dissolved	ug/L	ND	80	80	75.0	75.4	94	94	70-130	.7	20
Magnesium, Dissolved	ug/L	155000	1000	1000	164000	166000	850	1150	70-130	2	20 M1
Manganese, Dissolved	ug/L	685	80	80	762	778	96	117	70-130	2	20
Nickel, Dissolved	ug/L	2.6	80	80	88.4	90.1	107	109	70-130	2	20
Potassium, Dissolved	ug/L	35800	1000	1000	36200	37200	46	146	70-130	3	20 M1
Selenium, Dissolved	ug/L	1.6	80	80	81.4	83.8	100	103	70-130	3	20
Silver, Dissolved	ug/L	ND	80	80	56.8	55.0	71	69	70-130	3	20 M1
Sodium, Dissolved	ug/L	147000	1000	1000	156000	159000	840	1140	70-130	2	20 M1
Thallium, Dissolved	ug/L	ND	80	80	77.2	78.2	96	98	70-130	1	20
Vanadium, Dissolved	ug/L	0.28	80	80	83.4	83.7	104	104	70-130	.4	20
Zinc, Dissolved	ug/L	ND	80	80	90.3	82.8	111	101	70-130	9	20

**MATRIX SPIKE SAMPLE:** 1022751

Parameter	Units	60103165009		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers	
		Result	Conc.					Qualifiers	
Aluminum, Dissolved	ug/L	19.1	80	80	107	110	70-130		
Antimony, Dissolved	ug/L	ND	80	80	81.8	102	70-130		
Arsenic, Dissolved	ug/L	ND	80	80	83.4	104	70-130		
Barium, Dissolved	ug/L	49.8	80	80	129	99	70-130		
Beryllium, Dissolved	ug/L	ND	80	80	84.4	105	70-130		
Cadmium, Dissolved	ug/L	0.49	80	80	83.6	104	70-130		
Calcium, Dissolved	ug/L	42900	1000	43800		85	70-130		
Chromium, Dissolved	ug/L	ND	80	80	82.1	102	70-130		
Copper, Dissolved	ug/L	1.3	80	80	84.7	104	70-130		

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

MATRIX SPIKE SAMPLE:	1022751	60103165009		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units	Result						
Iron, Dissolved	ug/L	ND	1000	1050	103	70-130		
Lead, Dissolved	ug/L	ND	80	82.0	102	70-130		
Magnesium, Dissolved	ug/L	5120	1000	6200	108	70-130		
Manganese, Dissolved	ug/L	85.8	80	169	104	70-130		
Nickel, Dissolved	ug/L	1.2	80	85.0	105	70-130		
Potassium, Dissolved	ug/L	727	1000	1770	104	70-130		
Selenium, Dissolved	ug/L	ND	80	89.6	112	70-130		
Silver, Dissolved	ug/L	ND	80	76.4	95	70-130		
Sodium, Dissolved	ug/L	2160	1000	3190	103	70-130		
Thallium, Dissolved	ug/L	ND	80	82.8	103	70-130		
Vanadium, Dissolved	ug/L	0.17	80	84.0	105	70-130		
Zinc, Dissolved	ug/L	81.7	80	169	109	70-130		

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	MERC/5701	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

METHOD BLANK: 1023928 Matrix: Water

Associated Lab Samples: 60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007,  
60103165008, 60103165009, 60103165010, 60103165011

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Mercury	ug/L	ND	0.20	08/05/11 10:01	

LABORATORY CONTROL SAMPLE: 1023929

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Mercury	ug/L	5	4.9	98	80-120	

MATRIX SPIKE SAMPLE: 1023932

Parameter	Units	10164889001	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Mercury	ug/L	<0.037	5	5.0	100	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 1026205 1026206

Parameter	Units	10164903006	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
		Result	Spike	Spike							
Mercury	ug/L	ND	5	5	5.4	5.3	108	107	80-120	1	20

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	MERC/5694	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury Dissolved
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

METHOD BLANK: 1022189 Matrix: Water

Associated Lab Samples: 60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007,  
60103165008, 60103165009, 60103165010, 60103165011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/05/11 11:05	

LABORATORY CONTROL SAMPLE: 1022190

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	80-120	

MATRIX SPIKE SAMPLE: 1022193

Parameter	Units	Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	60103165011	ND	5	5.3	106	80-120

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 1026207 1026208

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Mercury, Dissolved	ug/L	10164577002	ND	5	5	5.0	5.6	100	112	80-120	11	20

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	MT/6563	Analysis Method:	SM 2510B
QC Batch Method:	SM 2510B	Analysis Description:	2510B Specific Conductance
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

METHOD BLANK: 1024258 Matrix: Water

Associated Lab Samples: 60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007,  
60103165008, 60103165009, 60103165010, 60103165011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	10.0	08/01/11 14:31	

LABORATORY CONTROL SAMPLE: 1024259

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	989	99	90-110	

SAMPLE DUPLICATE: 1024260

Parameter	Units	60103165001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	178	176	1	20	

SAMPLE DUPLICATE: 1025203

Parameter	Units	10164766001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	34.0	32.8	4	20	

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	WET/30280	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

METHOD BLANK: 853143                          Matrix: Water

Associated Lab Samples: 60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007,  
60103165008, 60103165009, 60103165010, 60103165011

Parameter	Units	Blank	Reporting		Qualifiers
		Result	Limit	Analyzed	
Alkalinity, Carbonate (CaCO <sub>3</sub> )	mg/L	ND	20.0	08/01/11 12:00	
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	ND	20.0	08/01/11 12:00	
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	mg/L	ND	20.0	08/01/11 12:00	

LABORATORY CONTROL SAMPLE: 853144

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	455	91	90-110	

SAMPLE DUPLICATE: 853145

Parameter	Units	60103165002	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
Alkalinity, Carbonate (CaCO <sub>3</sub> )	mg/L	ND	ND		24	
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	63.7	65.5	3	9	
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	mg/L	64.0	66.0	3	9	

SAMPLE DUPLICATE: 853146

Parameter	Units	60103165009	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
Alkalinity, Carbonate (CaCO <sub>3</sub> )	mg/L	ND	ND		24	
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	74.6	76.4	2	9	
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	mg/L	75.0	76.0	1	9	

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

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QC Batch:	WET/30191	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

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METHOD BLANK:	850478	Matrix:	Water
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

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Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	07/27/11 09:35	

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SAMPLE DUPLICATE: 850479

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	60103181001	1090	1140	5	17

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SAMPLE DUPLICATE: 850480

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	60103165004	880	965	9	17

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## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	WET/30190	Analysis Method:	SM 2540D
QC Batch Method:	SM 2540D	Analysis Description:	2540D Total Suspended Solids
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

METHOD BLANK:	850475	Matrix:	Water
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Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		
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Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	07/27/11 12:52	

SAMPLE DUPLICATE: 850476

Parameter	Units	60103165001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	43.0	42.0	2	25	

SAMPLE DUPLICATE: 850477

Parameter	Units	60103165011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

QC Batch:	WETA/17147	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

METHOD BLANK: 853321 Matrix: Water

Associated Lab Samples: 60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165007, 60103165008,  
60103165009, 60103165010, 60103165011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	08/02/11 17:05	

METHOD BLANK: 854739 Matrix: Water

Associated Lab Samples: 60103165006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	08/03/11 09:25	

LABORATORY CONTROL SAMPLE: 853322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 854740

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 853323 853324

Parameter	Units	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Max Qual
Sulfate	mg/L	27.5	25	25	53.4	52.6	104	100	61-119	1	10	

MATRIX SPIKE SAMPLE: 853325

Parameter	Units	60103165010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	41.6	25	69.5	111	61-119	

## QUALITY CONTROL DATA

Project: RICO SW SAMPLING JULY 2011

Pace Project No.: 60103165

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QC Batch:	WETA/17121	Analysis Method:	SM 4500-CN-E
QC Batch Method:	SM 4500-CN-E	Analysis Description:	4500CNE Cyanide, Total
Associated Lab Samples:	60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007, 60103165008, 60103165009, 60103165010, 60103165011		

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METHOD BLANK: 851963 Matrix: Water

Associated Lab Samples: 60103165001, 60103165002, 60103165003, 60103165004, 60103165005, 60103165006, 60103165007,  
60103165008, 60103165009, 60103165010, 60103165011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	07/29/11 19:18	

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LABORATORY CONTROL SAMPLE: 851964

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.097	97	69-126	

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MATRIX SPIKE SAMPLE: 851965

Parameter	Units	60103165001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	ND	.1	0.097	97	41-136	

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SAMPLE DUPLICATE: 851966

Parameter	Units	60103165002 Result	Dup Result	Max RPD	Qualifiers
Cyanide	mg/L	ND	ND	26	

## QUALIFIERS

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

PASI-M Pace Analytical Services - Minneapolis

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60103165001	DR-1	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165002	DR-2	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165003	DR-3	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165004	DR-4	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165005	DR-5	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165006	DR-6	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165007	DR-7	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165008	DR-8	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165009	DR-4-SW	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165010	DR-G	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165011	FB	EPA 200.8	ICPM/27402	EPA 200.8	ICPM/11190
60103165001	DR-1	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165002	DR-2	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165003	DR-3	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165004	DR-4	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165005	DR-5	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165006	DR-6	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165007	DR-7	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165008	DR-8	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165009	DR-4-SW	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165010	DR-G	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165011	FB	EPA 200.8	ICPM/27404	EPA 200.8	ICPM/11154
60103165001	DR-1	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165002	DR-2	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165003	DR-3	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165004	DR-4	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165005	DR-5	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165006	DR-6	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165007	DR-7	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165008	DR-8	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165009	DR-4-SW	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165010	DR-G	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165011	FB	EPA 7470	MERC/5701	EPA 7470	MERC/6524
60103165001	DR-1	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165002	DR-2	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165003	DR-3	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165004	DR-4	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165005	DR-5	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165006	DR-6	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165007	DR-7	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165008	DR-8	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165009	DR-4-SW	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165010	DR-G	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165011	FB	EPA 7470	MERC/5694	EPA 7470	MERC/6525
60103165001	DR-1	SM 2510B	MT/6563		
60103165002	DR-2	SM 2510B	MT/6563		
60103165003	DR-3	SM 2510B	MT/6563		

Date: 08/10/2011 04:07 PM

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60103165004	DR-4	SM 2510B	MT/6563		
60103165005	DR-5	SM 2510B	MT/6563		
60103165006	DR-6	SM 2510B	MT/6563		
60103165007	DR-7	SM 2510B	MT/6563		
60103165008	DR-8	SM 2510B	MT/6563		
60103165009	DR-4-SW	SM 2510B	MT/6563		
60103165010	DR-G	SM 2510B	MT/6563		
60103165011	FB	SM 2510B	MT/6563		
60103165001	DR-1	Calculated	MT/6572		
60103165002	DR-2	Calculated	MT/6572		
60103165003	DR-3	Calculated	MT/6572		
60103165004	DR-4	Calculated	MT/6572		
60103165005	DR-5	Calculated	MT/6572		
60103165006	DR-6	Calculated	MT/6572		
60103165007	DR-7	Calculated	MT/6572		
60103165008	DR-8	Calculated	MT/6572		
60103165009	DR-4-SW	Calculated	MT/6572		
60103165010	DR-G	Calculated	MT/6572		
60103165011	FB	Calculated	MT/6572		
60103165001	DR-1	SM 2320B	WET/30280		
60103165002	DR-2	SM 2320B	WET/30280		
60103165003	DR-3	SM 2320B	WET/30280		
60103165004	DR-4	SM 2320B	WET/30280		
60103165005	DR-5	SM 2320B	WET/30280		
60103165006	DR-6	SM 2320B	WET/30280		
60103165007	DR-7	SM 2320B	WET/30280		
60103165008	DR-8	SM 2320B	WET/30280		
60103165009	DR-4-SW	SM 2320B	WET/30280		
60103165010	DR-G	SM 2320B	WET/30280		
60103165011	FB	SM 2320B	WET/30280		
60103165001	DR-1	SM 2540C	WET/30191		
60103165002	DR-2	SM 2540C	WET/30191		
60103165003	DR-3	SM 2540C	WET/30191		
60103165004	DR-4	SM 2540C	WET/30191		
60103165005	DR-5	SM 2540C	WET/30191		
60103165006	DR-6	SM 2540C	WET/30191		
60103165007	DR-7	SM 2540C	WET/30191		
60103165008	DR-8	SM 2540C	WET/30191		
60103165009	DR-4-SW	SM 2540C	WET/30191		
60103165010	DR-G	SM 2540C	WET/30191		
60103165011	FB	SM 2540C	WET/30191		
60103165001	DR-1	SM 2540D	WET/30190		
60103165002	DR-2	SM 2540D	WET/30190		
60103165003	DR-3	SM 2540D	WET/30190		
60103165004	DR-4	SM 2540D	WET/30190		
60103165005	DR-5	SM 2540D	WET/30190		
60103165006	DR-6	SM 2540D	WET/30190		

Date: 08/10/2011 04:07 PM

**REPORT OF LABORATORY ANALYSIS**

Page 46 of 47

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without the written consent of Pace Analytical Services, Inc..

Page 46 of 52

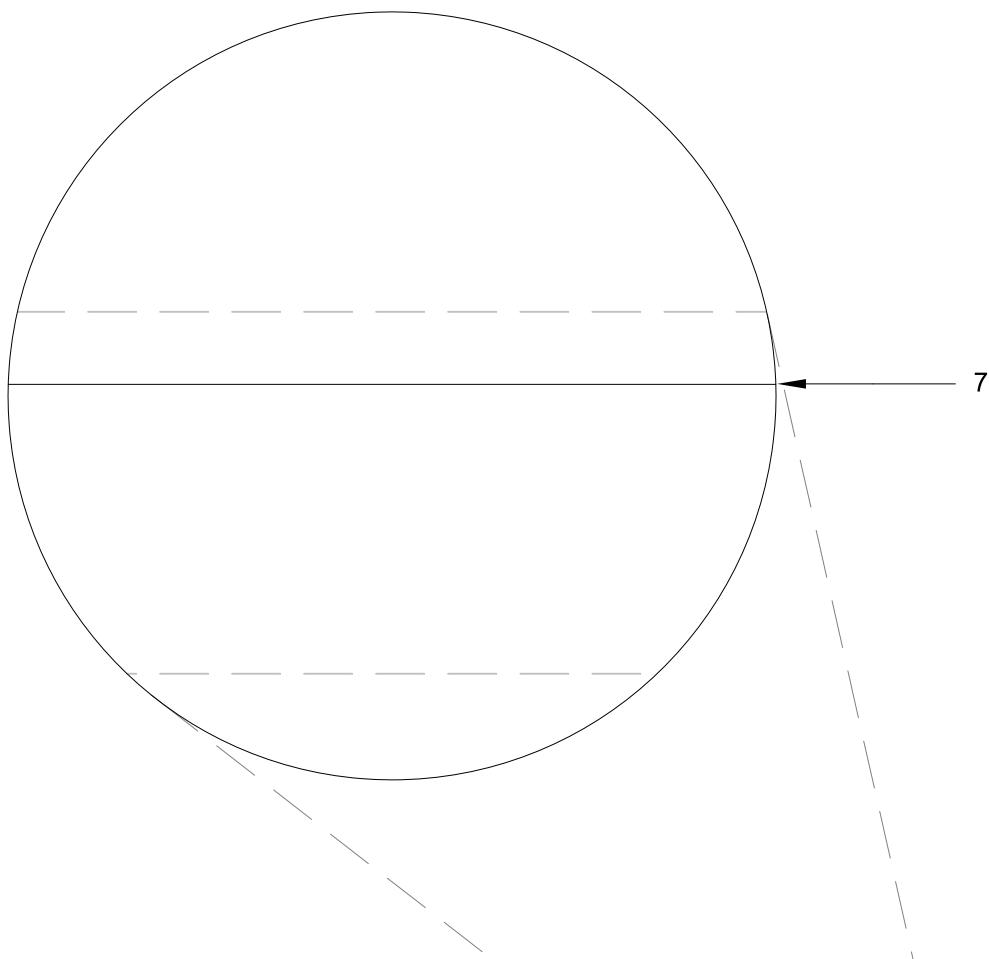
**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: RICO SW SAMPLING JULY 2011  
Pace Project No.: 60103165

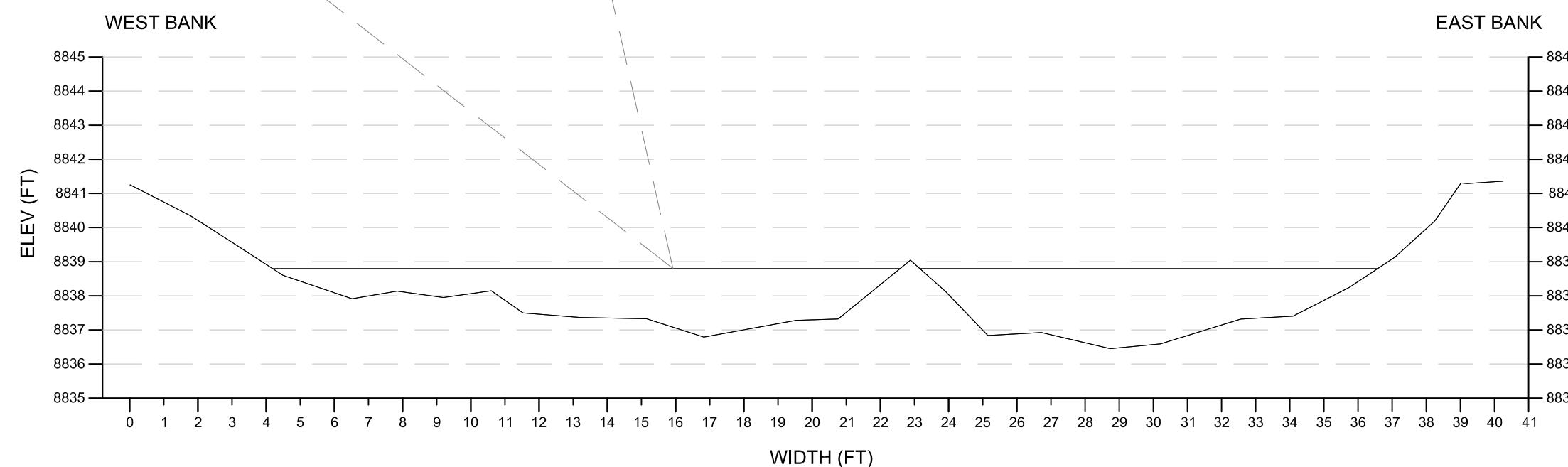
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60103165007	DR-7	SM 2540D	WET/30190		
60103165008	DR-8	SM 2540D	WET/30190		
60103165009	DR-4-SW	SM 2540D	WET/30190		
60103165010	DR-G	SM 2540D	WET/30190		
60103165011	FB	SM 2540D	WET/30190		
60103165001	DR-1	EPA 300.0	WETA/17147		
60103165002	DR-2	EPA 300.0	WETA/17147		
60103165003	DR-3	EPA 300.0	WETA/17147		
60103165004	DR-4	EPA 300.0	WETA/17147		
60103165005	DR-5	EPA 300.0	WETA/17147		
60103165006	DR-6	EPA 300.0	WETA/17147		
60103165007	DR-7	EPA 300.0	WETA/17147		
60103165008	DR-8	EPA 300.0	WETA/17147		
60103165009	DR-4-SW	EPA 300.0	WETA/17147		
60103165010	DR-G	EPA 300.0	WETA/17147		
60103165011	FB	EPA 300.0	WETA/17147		
60103165001	DR-1	SM 4500-CN-E	WETA/17121		
60103165002	DR-2	SM 4500-CN-E	WETA/17121		
60103165003	DR-3	SM 4500-CN-E	WETA/17121		
60103165004	DR-4	SM 4500-CN-E	WETA/17121		
60103165005	DR-5	SM 4500-CN-E	WETA/17121		
60103165006	DR-6	SM 4500-CN-E	WETA/17121		
60103165007	DR-7	SM 4500-CN-E	WETA/17121		
60103165008	DR-8	SM 4500-CN-E	WETA/17121		
60103165009	DR-4-SW	SM 4500-CN-E	WETA/17121		
60103165010	DR-G	SM 4500-CN-E	WETA/17121		
60103165011	FB	SM 4500-CN-E	WETA/17121		

**Appendix E**

**Flow Cross Sections**



## DR-1 CROSS SECTION



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General Notes		
	Scale in Feet	
No.	Revision/Issue	Date

ATLANTIC RICHFIELD  
COMPANY



ANDERSON  
ENGINEERING COMPANY, INC.

DRAWN BY: MAD  
ENGINEER: CS, MAD  
APPROVED:

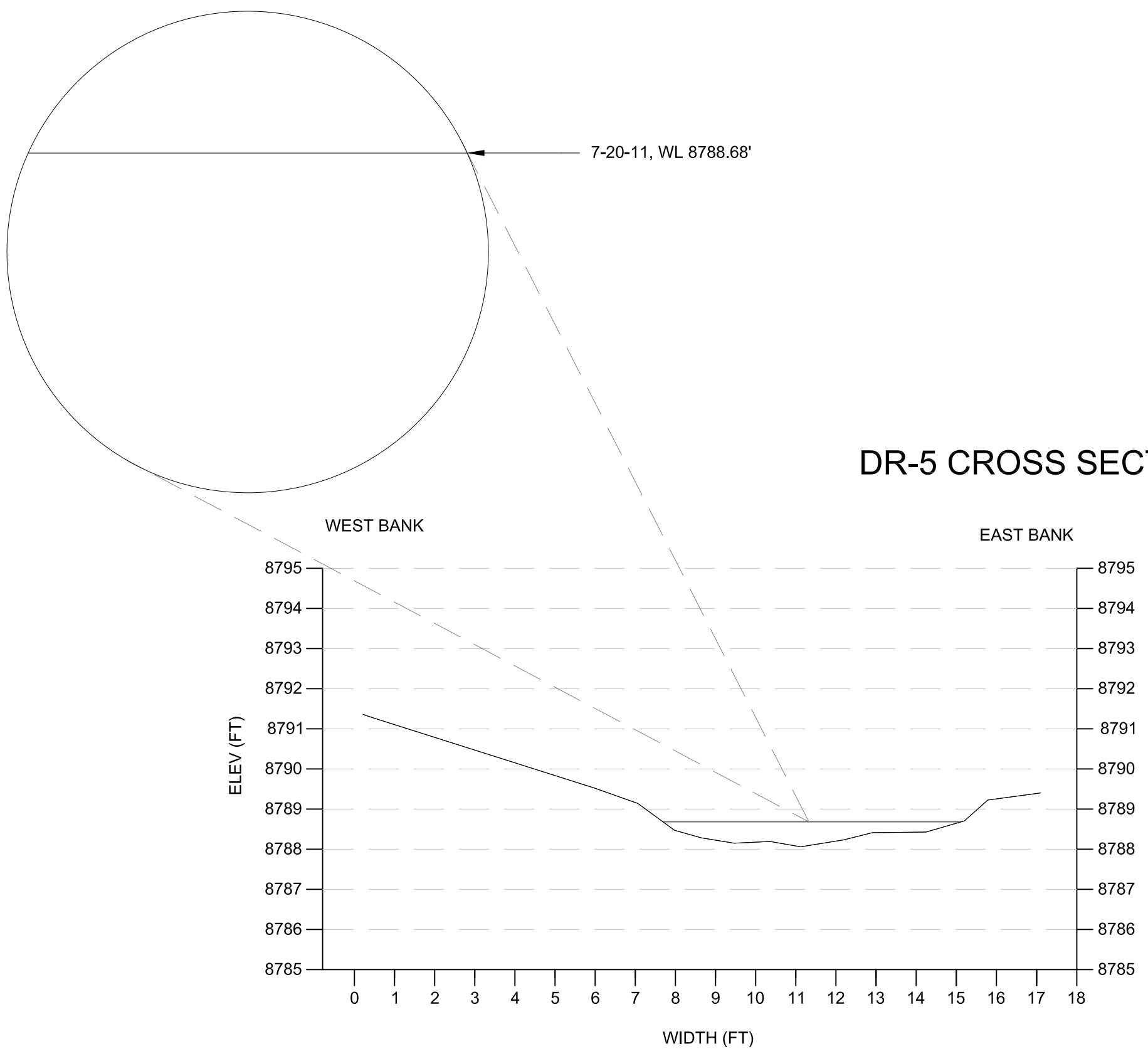
RICO SURFACE  
WATER SAMPLING

DOLORES RIVER CROSS  
SECTION AT SAMPLING  
STATION DR-1, JULY 2011

RICO, CO

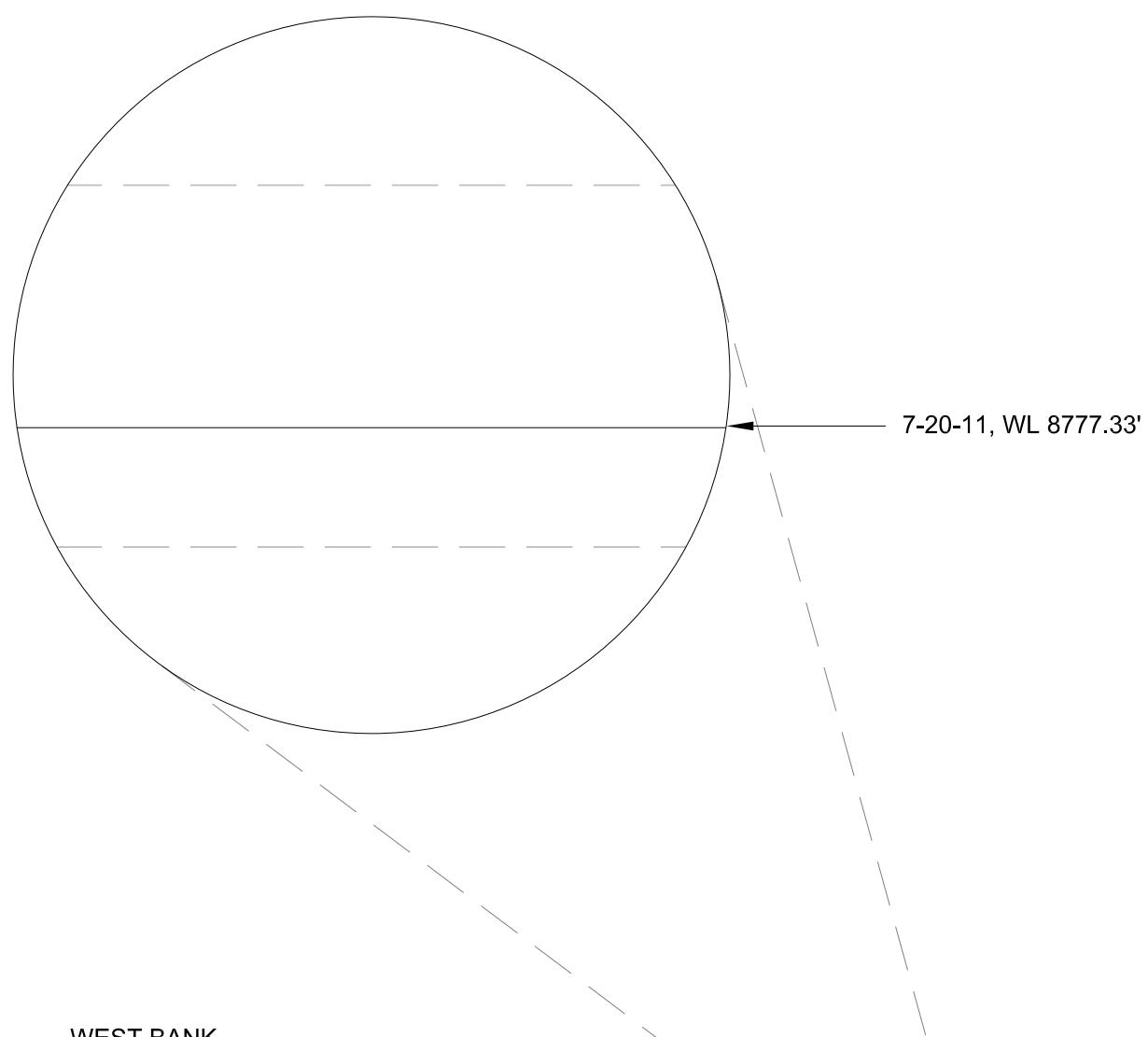
Project	Figure
Date	22-AUG-2011
Scale	

3

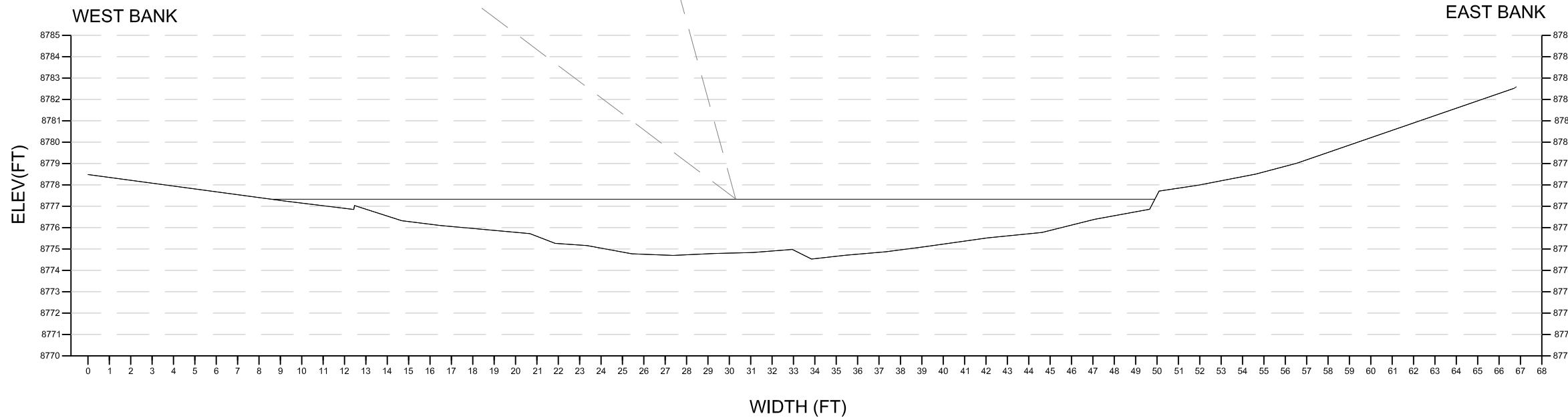


## DR-5 CROSS SECTION

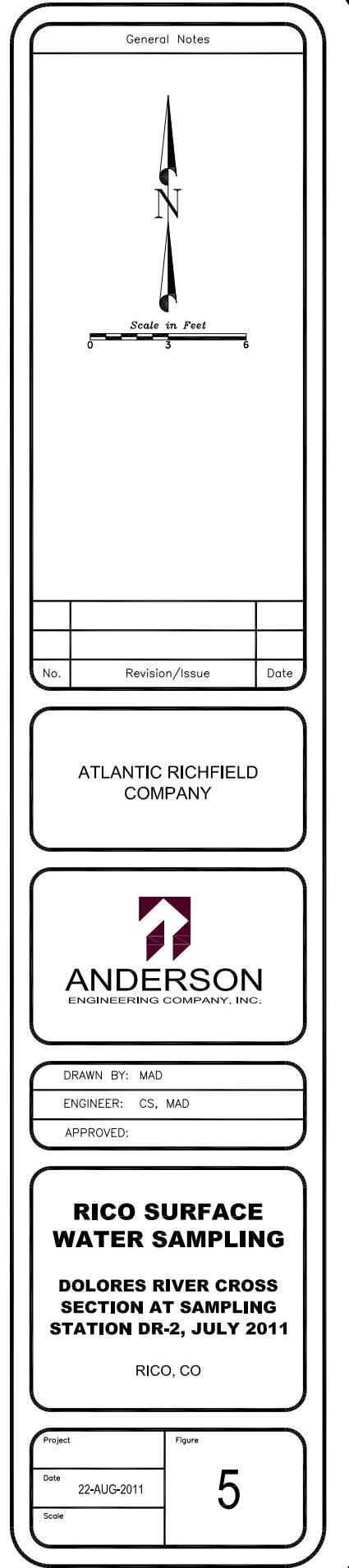
General Notes											
 Scale in Feet 											
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No.	Revision/Issue	Date									
ATLANTIC RICHFIELD COMPANY											
 ANDERSON ENGINEERING COMPANY, INC.											
DRAWN BY: MAD ENGINEER: CS, MAD APPROVED:  <b>RICO SURFACE WATER SAMPLING</b> <b>POND 8 EMBANKMENT CROSS SECTION AT SAMPLING STATION DR-5, JULY 2011</b> RICO, CO											
Project: _____ Date: 22-AUG-2011 Scale: _____		Figure: 4									

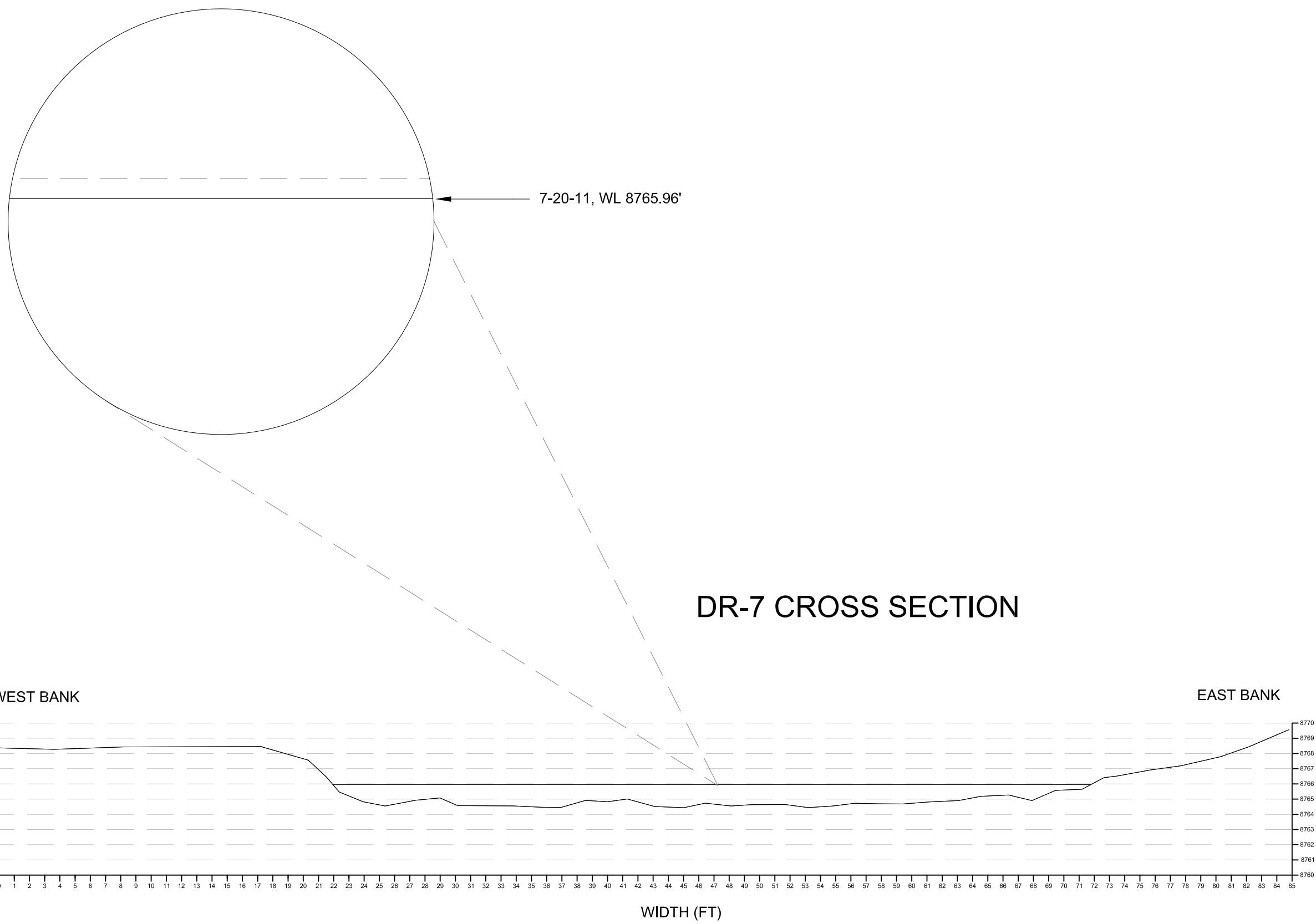


## DR-2 CROSS SECTION

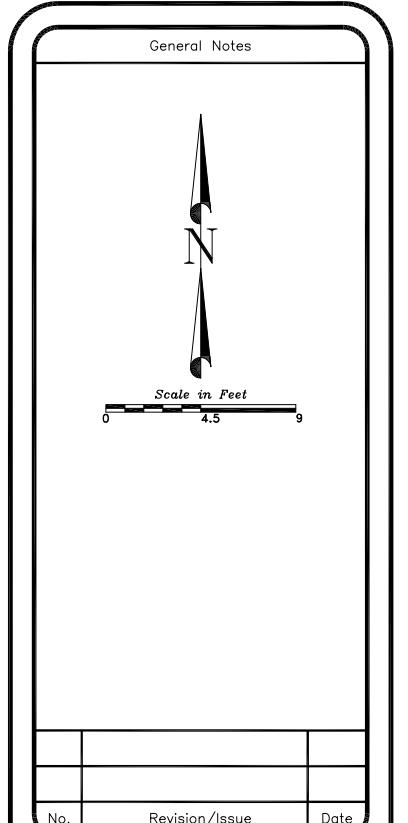


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ATLANTIC RICHFIELD  
COMPANY



**ANDERSON**  
ENGINEERING COMPANY, INC.

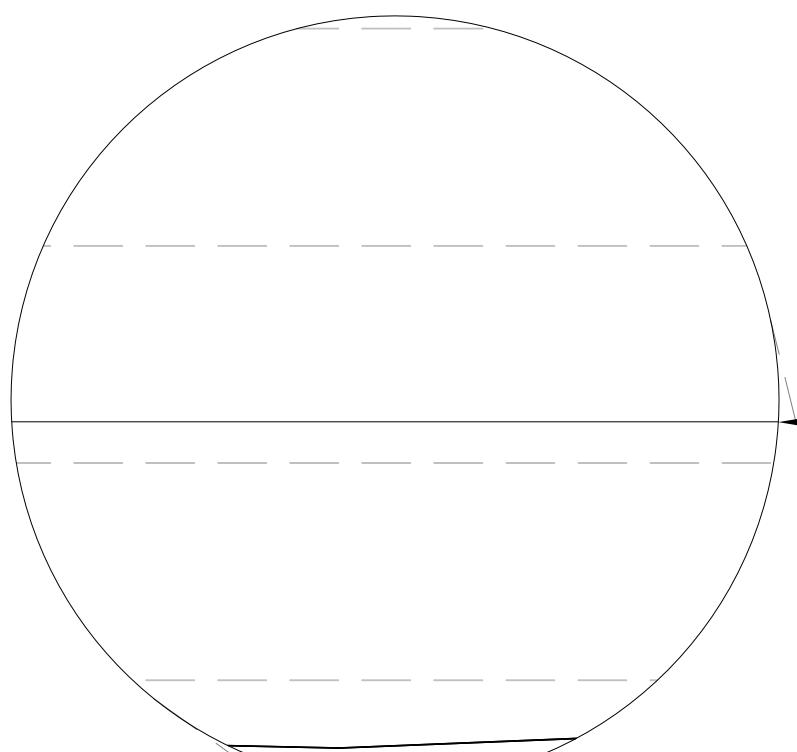
DRAWN BY: MAD  
ENGINEER: CS, MAD  
APPROVED:

## **RICO SURFACE WATER SAMPLING**

**DOLORES RIVER CROSS  
SECTION AT SAMPLING  
STATION DR 7, JULY 2011**

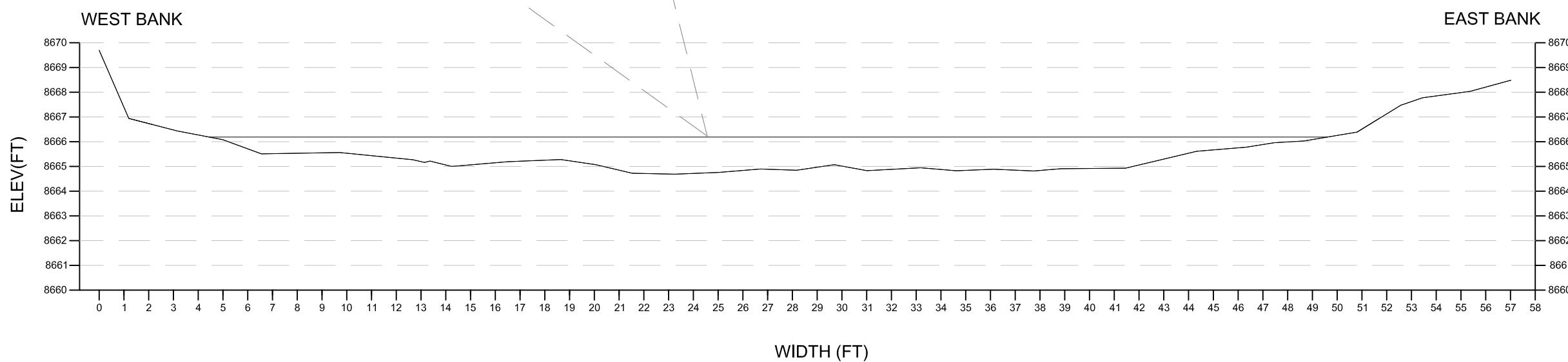
BICO CO

project	Figure
date	22-AUG-2011
cale	6



7-20-11, WL 8666.19'

## DR-4-SW CROSS SECTION



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General Notes		
 <i>Scale in Feet</i> 		
No.	Revision/Issue	Date

ATLANTIC RICHFIELD  
COMPANY



ANDERSON  
ENGINEERING COMPANY, INC.

DRAWN BY: MAD  
ENGINEER: CS, MAD  
APPROVED:

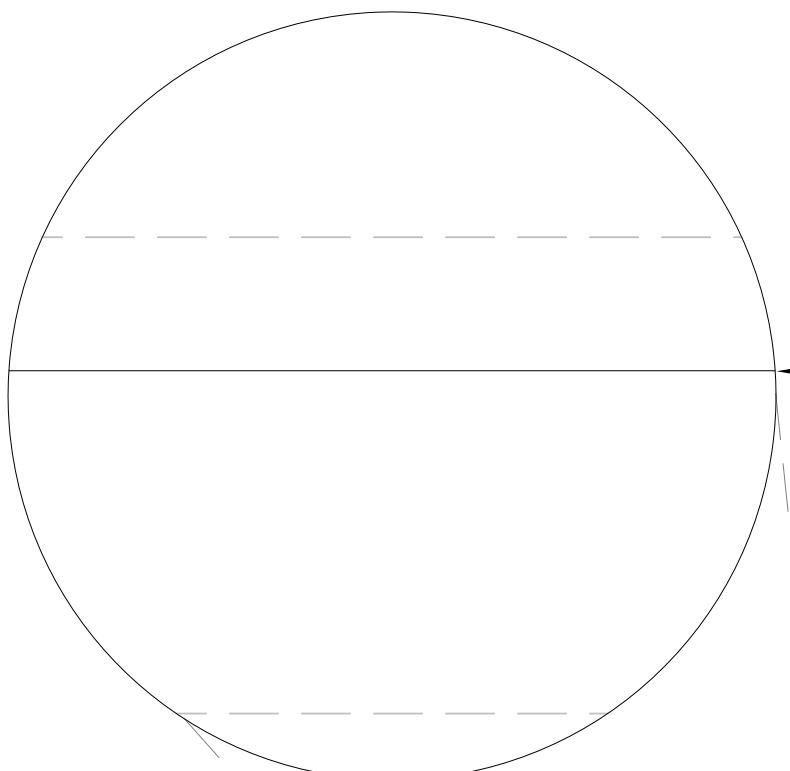
**RICO SURFACE  
WATER SAMPLING**

**DOLORES RIVER CROSS  
SECTION AT SAMPLING  
STATION DR-4-SW, JULY  
2011**

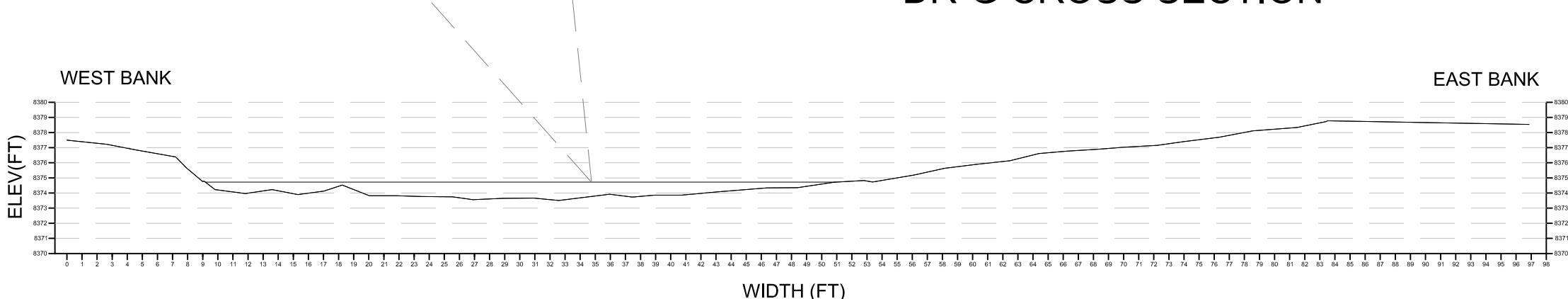
RICO, CO

Project	Figure
Date	22-AUG-2011
Scale	

7



7-20-11, WL 8374.72'



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General Notes											
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No.	Revision/Issue	Date									
ATLANTIC RICHFIELD COMPANY											



DRAWN BY: MAD  
ENGINEER: CS, MAD  
APPROVED:

**RICO SURFACE  
WATER SAMPLING**  
**DOLORES RIVER CROSS  
SECTION AT SAMPLING  
STATION DR-G, JULY 2011**  
RICO, CO

Project	Figure
Date	22-AUG-2011
Scale	

8

**Appendix F**  
**Chain of Custody Records**



Pace  
Labs

# DataChem Laboratories, Inc.

## Field Chain-of-Custody Record

Page 2 of 2

Client Name & Address: <i>Anderson Engineering Co., Inc. 977 West 2100 South Salt Lake City, UT 84119</i>			Project No.: _____			Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested					No. of Containers	Matrix Codes: W) Water      B) Bulk L) Liquid      F) Filter S) Soil      G) Wipe C) Solid      M) Media		
Phone: 801-972-6222 FAX: 801-972-6235 e-mail: mdefrioz@anderseneng.com			Project Name: <i>Rico SW Sampling, July 2001</i>						Total Metals, Hardness Alk, TDS, TSS, Sulfate							Cyanide	
Field Sample Number			Site ID	Date	Time	Depth	DCL Sample Number										
DL-71			1BP3u	2BP3NPH1.5-1BP3CPH12.5	7/20/11		1BP2u	4,5		X	X	X	X	X		5	<i>007</i>
DR-8					7/20/11			4,5		X	X	X	X	X		5	<i>008</i>
DR-4-SW					7/20/11			4,5		X	X	X	X	X		5	<i>009</i>
DR-9					7/20/11			4,5		X	X	X	X	X		5	<i>010</i>
FB			↓	↓	7/20/11	↓		4,5		X	X	X	X	X		5	<i>011</i>
															Remarks <i>60103105</i>		
Possible Hazard Identification			Sample Disposal			Requested Turn Around Time											
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Rad <input type="checkbox"/> Flammable <input type="checkbox"/> Poison <input type="checkbox"/> Unknown			<input type="checkbox"/> Return to Client <input type="checkbox"/> Archive for _____ Months <input checked="" type="checkbox"/> Disposal by Lab <small>(a fee may be assessed if samples are retained longer than 3 months)</small>			<input type="checkbox"/> 2 Days (Rush) <input type="checkbox"/> 7 Days <input type="checkbox"/> 21 Days <input type="checkbox"/> 3 Days (Rush) <input checked="" type="checkbox"/> 14 Days <input type="checkbox"/> Other <small>(Rush is email or fax data unless previously approved)</small>											
Relinquished by: (Signature) <i>Lil D.Z.</i>								Carrier/Airbill #: _____									
Received by: (Signature) <i>Pheng Vang</i>								Date	Time	Shipped to:  DataChem Laboratories, Inc. 960 West LeVoy Drive Salt Lake City, UT 84123 Phone: (800) 366-9135 Phone: (801) 266-7700 FAX: (801) 268-9992 <a href="http://www.datachem.com">www.datachem.com</a>							
Relinquished by: (Signature)								Date	Time								
Received by: (Signature)								Date	Time								
Relinquished by: (Signature)								Date	Time								
Received by: (Signature)								Date	Time								

White - Laboratory Copy

Yellow - Client Copy



Face  
Labs

# DataChem Laboratories, Inc.

## Field Chain-of-Custody Record

Page 1 of 2

Client Name & Address: <i>Anderson Engineering Co., Inc 977 West 2100 South</i>		Project No.: <i>Rico SW Sampling</i>		Preservation Code	Sample Matrix Code	Sample for Matrix QC	Analyses Requested					No. of Containers	Matrix Codes: W) Water    B) Bulk L) Liquid    F) Filter S) Soil    G) Wipe C) Solid    M) Media
Phone: (801) 972-6222		Project Name: Rico SW Sampling July 2011					Total Metals, Hardness	Dissolved Metals	Alkalinity, TDS, Salinity, Specific Conductance	Cyanide	Salinity		
FAX: (801) 972-6235		Sampler: (Signature) <i>ZL D.R.</i>											
e-mail: <a href="mailto:mdefriez@andersoneng.com">mdefriez@andersoneng.com</a>													
Field Sample Number	Site ID	Date	Time	Depth	DCL Sample Number								
DR-1	IBP3u	7/20/11	IBP3CPH12.5	IBP2u		X	X	X	X	X		5	001
DR-2		7/20/11				X	X	X	X	X		5	002
DR-3		7/20/11				X	X	X	X	X		5	003
DR-4		7/20/11				X	X	X	X	X		5	004
DR-5		7/20/11				X	X	X	X	X		5	005
DR-6	↓	7/20/11	↓	↓		X	X	X	✓	✓		5	006
Possible Hazard Identification				Sample Disposal				Requested Turn Around Time					
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Rad	<input type="checkbox"/> Return to Client	<input type="checkbox"/> Archive for _____ Months	<input type="checkbox"/> 2 Days (Rush)	<input type="checkbox"/> 7 Days	<input type="checkbox"/> 21 Days	<input type="checkbox"/> Flammable	<input type="checkbox"/> Poison	<input type="checkbox"/> Unknown	<input type="checkbox"/> Disposal by Lab	<input checked="" type="checkbox"/> 14 Days	<input type="checkbox"/> Other
(a fee may be assessed if samples are retained longer than 3 months)												(Rush is email or fax data unless previously approved)	
Relinquished by: (Signature) <i>ZL D.R.</i>						Received by: (Signature) <i>Phew Vang</i>				Date	Time	Carrier/Airbill #:	
Relinquished by: (Signature)						Received by: (Signature)				7/26	0845	Shipped to:	
Relinquished by: (Signature)						Received by: (Signature)				Date	Time	DataChem Laboratories, Inc. 960 West LeVoy Drive Salt Lake City, UT 84123 Phone: (800) 356-9135 Phone: (801) 266-7700 FAX: (801) 268-9992 <a href="http://www.datachem.com">www.datachem.com</a>	

White - Laboratory Copy

Yellow - Client Copy



## Sample Condition Upon Receipt

Client Name: Anderson Engineering Project # 60103165

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace  Other  
 Tracking #: 8756276660643 Pace Shipping Label Used?  Yes  No

Custody Seal on Cooler/Box Present:  Yes  No Seals intact:  Yes  No

Packing Material:  Bubble Wrap  Bubble Bags  Foam  None  Other 2PC

Thermometer Used: T-191 / T-194 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature: 76.10 Comments: Date and Initials of person examining contents: PL 7/26/11  
 Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Filtered volume received for dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sample labels match COC: -Includes date/time/ID/analyses Matrix:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <u>WT</u> <i>no times.</i>
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed _____ Lot # of added preservative _____
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	17. List State: <u>NC</u>

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: 8214 + 8215

Project Manager Review: CBK

Date: 7/27/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

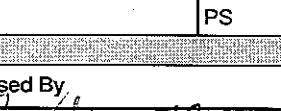
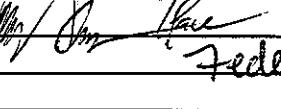
## **Chain of Custody**



Workorder: 60103165

**Workorder Name: RICO SW SAMPLING JULY 2011**

Owner Received Date: 7/26/2011 Results Requested By: 8/5/2011

Report To		Subcontract To					Requested Analysis															
Colleen Koporc Pace Analytical Services, Inc. 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665 Fax (913)599-1759		Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700																				
10164897	LAB USE ONLY	001 002 003 004 005 006 007 008 009 010 011	Preserved Containers																			
			Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	none													
			1	DR-1	PS	7/20/2011 00:00	60103165001	Water	1													
			2	DR-2	PS	7/20/2011 00:00	60103165002	Water	1													
			3	DR-3	PS	7/20/2011 00:00	60103165003	Water	1													
			4	DR-4	PS	7/20/2011 00:00	60103165004	Water	1													
			5	DR-5	PS	7/20/2011 00:00	60103165005	Water	1													
			6	DR-6	PS	7/20/2011 00:00	60103165006	Water	1													
			7	DR-7	PS	7/20/2011 00:00	60103165007	Water	1													
			8	DR-8	PS	7/20/2011 00:00	60103165008	Water	1													
			9	DR-4-SW	PS	7/20/2011 00:00	60103165009	Water	1													
			10	DR-G	PS	7/20/2011 00:00	60103165010	Water	1													
11	FB	PS	7/20/2011 00:00	60103165011	Water	1																
Comments																						
Transfers	Released By		Date/Time	Received By			Date/Time															
1			7/27/11 1200	Ray Vashy PACE			7/28/11 1015															
2			7/28/11 1015																			
3			7/28/11																			
Cooler Temperature on Receipt				Custody Seal		Y	N	Received on Ice				Y	N	Samples Intact						Y	N	

## Sample Condition Upon Receipt

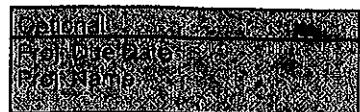
PaceAnalytical

Client Name: PACE KS

Project # 10164897

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 41515002305

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noPacking Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_ Temp Blank: Yes  No \_\_\_\_\_

Thermometer Used 1083045 or 135

Type of Ice:  Wet  Blue  None Samples on ice, cooling process has begun

Cooler Temperature 2.6°

Biological Tissue Is Frozen: Yes  No

Date and Initials of person examining contents: HCT 7/28/14

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	H <sub>2</sub> O	
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> HCl Samp #
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

## Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_Project Manager Review: DJH

Date: 7-30-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

## **Appendix G**

### **Field Photos**



Cross Section at Station DR-1



Cross Section at Station DR-5



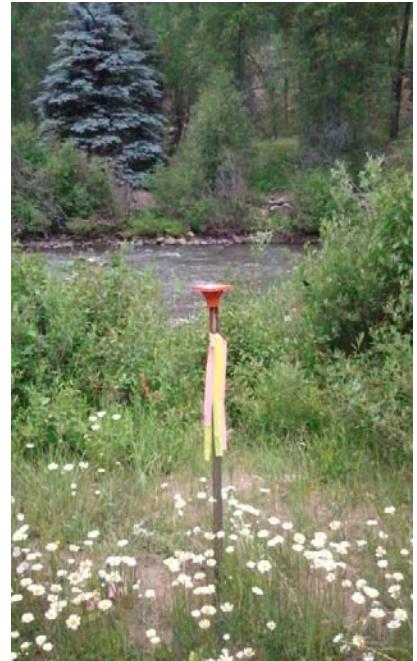
Cross Section at Station DR-2



Cross Section at Station DR-7



**Cross Section at Station DR-4-SW**



**Cross Section at Station DR-G**

**Appendix H**  
**Field Log Book Records**

Date 7-20-11

Station DR-1

BM Elev: 5.46

Water Elev: 8.02

Velocity Readings: East → West

flow meter: 1.70 3.45 3.50 4.0  
3.95 5.05 5.35 4.43 2.22  
4.0 2.68 1.17 0.08 0.02 0.45

Floating method (times):

Field parameters:

pH: 8.55 T: 19.8°C EC: 164.4 μS  
DO: 2.63 ppm

Sample time: 4:45 pm

photo # 11

Notes:

Date 7-20-11

Station DR-2: Above system outfall

BM Elev: 5.26

Water Elev: 10.88

#<sup>no</sup> East → west

Velocity Readings: (7-21-11) West → East

flow meter: 0.26 0.30 0.72 1.01  
1.24 1.53 1.52 2.78 2.34 1.98  
2.16 2.74 1.46 2.01 1.17 0.07

Floating method (times): N/A

Field parameters:

pH: 8.14 T: 20.3°C EC: 291 μS DO: 3.67

Sample time: 6:15 pm

photo # 54

Notes:

Date: 7-20-11

Station DR-3: Adit Discharge  
BM Elev N/A  
Water Elev N/A

Velocity Readings (7-21-11)

flowmeter<sup>no</sup> Installed Parshall flume, flow by installed ultrasonic depth meter. Data down-load performed

flotation method (seconds)<sup>no</sup>

Field parameters:

pH: 6.49 T: 20.6 °C

EC: 1080 µS DO: 2.09 ppm

Sample Collected at:

photo #

Notes:

Date: 7-20-11

Station DR-4: Pond 15 discharge  
BM Elev:  
Water Elev:

Velocity Readings (7-21-11)

flowmeter: depth

Pipe 1 (upper): 0.35'

Pipe 2 (lower): 0.20'

flow<sup>no</sup> Pipe 1 velocity depth 7.01 7.30 6.18  
pipe 2 depth 3.16 3.07 2.83

Field parameters

pH: 7.51 T: 24.4 °C

EC: 1076 µS DO: 2.47 ppm

Sample Collected at:

photo # 9

Notes:

~~DR-G~~ 20-July-2011

DR-G

B/M EL 4.90

WL EL 8.72

East → west

Velocities: 0.25 0.29 0.46 1.80 1.74  
2.16 1.52 1.15 2.91 3.48 3.56 2.41  
3.46 3.56 3.57 3.61 2.45 3.09 2.97  
2.80 2.83 1.50 1.24 0.22

Field Parameters:

pH - 8.68 T - 21.0°C

EC - 309 μS DO - 3.45 ppm

photo # 12

20-July-2011

DR-7

B/M EL: 7.31

WL EL: 10.92

Velocity: 0.96 1.14 1.19 1.08  
1.65 2.49 1.95 3.90 3.08  
3.56 2.65 2.72 2.71 1.74  
2.98 2.78 3.07 2.81 2.26  
1.13 0.12

Velocities on 7-21-11

Field Parameters:

pH - 7.63 T - 16.1°C

EC - 300 μS DO - 2.34 ppm

Sample taken: 6:50 pm  
phot. # 845

DR-6

Velocity and flow by parshall  
flume and Orifice Mini

7-20-11

DR-5 Pond & discharge T

Bench Mark Elev: 5.37  
Water Elev: 8.05

Velocities

Flow meter (main spillway):

0.20 0.31 0.09

1st leak (1' x 3") : 1.73 fps <sup>MD</sup>

2nd leak ~~(1' x 3")~~ 3' x

1st leak (1' x 0.3') : 1.73 f/s

2nd leak (2' x 0.4') : 0.53 f/s

Field parameters -

pH = 7.28

T = 25. <sup>40</sup> °C

EC = 1148 μS

DO = 2.17 ppm

Field parameters -

pH = 7.63

T = 24.6 °C

EC = 1038 μS

DO = 1.56 ppm

photo # 6 (ramp) 7 (2nd) 8 (1st)

Velocities on 7-21-11

Date 7-20-11

DR-8

Velocity measurements  
Farshall Plume

Date 7-20-11

P.B

pH 7.19 T 24.4 °C  
EC 11.0 μS DO 2.02 ppm

Field Parameters

pH 6.90 T 20.6 °C  
EC 1046 μS DO 2.04 ppm

Sample Collected at:  
photo #

Notes: #

7-20-11

DR-4-SW

BM EL: 5.62  
WL EL: 7.92

Velocity 7-20-11 East → West

flow meter:	0.19	0.50	1.46	1.94
	2.72	3.87	2.48	2.46
	2.73	2.76	3.23	2.17
	3.36	3.28	3.64	2.02
	0.17	0.20		

Field Parameters

pH 7.85 T 17.1°C  
EC 232 μS DO 3.05 ppm

Sample Collected:

photo # 1

7-21-11

DR-3A

BM EL: 5.24  
WL EL: 9.75

Velocities

flow meter:	1.39	1.10	1.71	2.41
	3.21	3.25	3.40	3.89
	2.56	1.67	2.70	2.10
	2.13	2.07	2.11	1.59
			0.66	1.53

photo # 2

7-21-11

DR-2A

BM EL 4.79  
WL EL 10.48

Velocities 1.17 2.91 3.16 1.19  
0.40 0.64 0.88 2.63 2.52  
2.97 3.66 3.23 3.00 2.66  
4.24 3.15 3.03 1.51 2.79  
0.00 ~~1.34~~ 0.20

photo #3

7-21-11

DR-1A

BM EL 6.24  
WL EL 8.32

Velocities

flow meter: 0.89 1.89 2.71 3.39  
4.42 1.37 2.47 2.72 2.69 1.30  
1.13 1.69 1.29 2.73 3.03 2.08 1.85  
0.91 0.76 0.14

photo # 10

Date: 20-July-2011 Wed.

Groundwater well levels:

EB-2: 15.53'

EB-1: 20.0'

GW-7: 19.86'

GW-6: 21.12'

GW-5: 19.45'

GW-4: 9.99'

GW-3: 12.06'

GW-1: 0.94'

GW-0: 11.06'

**Appendix I**

**North Flume Ultrasonic Meter Data with Flowrates**

Date, Time	Reading	Parameter	Depth to water (ft)	Depth from sensor to Bottom of Flume (ft)	Depth of Flow (ft)	Depth of Flow (in)	Flowrate (cfs)	Flowrate (gpm)
7/1/2011 0:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 0:15	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 0:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 0:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 1:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 1:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 1:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 1:45	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 2:00	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 2:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 2:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 2:45	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 3:00	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 3:15	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 3:30	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 3:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 4:00	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 4:15	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 4:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 4:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 5:00	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 5:15	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 5:30	8.61	Level	1.39	2.073	0.683	8.195	1.72	773.8
7/1/2011 5:45	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 6:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 6:15	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 6:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 6:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 7:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 7:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 7:30	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 7:45	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
7/1/2011 8:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 8:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 8:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 8:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 9:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 9:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 9:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 9:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 10:00	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 10:15	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 10:30	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 10:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 11:00	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7

Time	Parameter	Value	Min	Max	Mean	Std Dev	Series
7/1/2011 11:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 11:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 11:45	8.68 Level	1.32	2.073	0.753	9.035	2.00	896.7
7/1/2011 12:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 12:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 12:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 12:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 13:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 13:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 13:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 13:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 14:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 14:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 14:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 14:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 15:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 15:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 15:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 15:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 16:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 16:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 16:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 16:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 17:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 17:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 17:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 17:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 18:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 18:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 18:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 18:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 19:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
7/1/2011 19:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/1/2011 19:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 19:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 20:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 20:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 20:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 20:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 21:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 21:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 21:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 21:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 22:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 22:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 22:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 22:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3

7/1/2011 23:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 23:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 23:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/1/2011 23:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 0:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 0:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 0:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 0:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 1:00	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 1:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 1:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 1:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 2:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 2:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 2:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 2:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 3:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 3:15	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 3:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 3:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 4:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 4:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 4:30	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 4:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 5:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 5:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 5:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 5:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 6:00	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 6:15	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 6:30	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 6:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 7:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 7:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 7:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 7:45	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 8:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 8:15	8.61 Level	1.39	2.073	0.683	8.195	1.72	773.8
7/2/2011 8:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 8:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 9:00	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/2/2011 9:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 9:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 9:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/2/2011 10:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/2/2011 10:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/2/2011 10:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7











































































7/20/2011 13:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 13:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 14:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 14:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 14:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 14:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 15:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 15:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 15:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 15:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 16:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 16:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 16:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 16:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 17:00	8.73	Level	1.27	2.073	0.803	9.635	2.20	988.2
7/20/2011 17:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 17:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 17:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 18:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 18:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 18:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 18:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 19:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 19:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 19:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 19:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 20:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/20/2011 20:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 20:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 20:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 21:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/20/2011 21:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/20/2011 21:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/20/2011 21:45	8.7	Level	1.3	2.073	0.773	9.275	2.08	932.9
7/20/2011 22:00	8.7	Level	1.3	2.073	0.773	9.275	2.08	932.9
7/20/2011 22:15	8.7	Level	1.3	2.073	0.773	9.275	2.08	932.9
7/20/2011 22:30	8.7	Level	1.3	2.073	0.773	9.275	2.08	932.9
7/20/2011 22:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/20/2011 23:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/20/2011 23:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/20/2011 23:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/20/2011 23:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/21/2011 0:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/21/2011 0:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/21/2011 0:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/21/2011 0:45	8.7	Level	1.3	2.073	0.773	9.275	2.08	932.9
7/21/2011 1:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3













7/23/2011 23:45	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 0:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 0:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 0:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 0:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 1:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 1:15	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 1:30	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 1:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 2:00	8.66 Level	1.34	2.073	0.733	8.795	1.92	861.0
7/24/2011 2:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 2:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 2:45	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 3:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 3:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 3:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 3:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 4:00	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 4:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 4:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 4:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 5:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 5:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 5:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 5:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 6:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 6:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 6:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 6:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 7:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 7:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 7:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 7:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 8:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 8:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 8:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/24/2011 8:45	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 9:00	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 9:15	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/24/2011 9:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 9:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 10:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 10:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
7/24/2011 10:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 10:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 11:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/24/2011 11:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7







7/25/2011 22:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/25/2011 23:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/25/2011 23:15	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/25/2011 23:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/25/2011 23:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 0:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 0:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 0:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 0:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 1:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 1:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 1:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 1:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 2:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 2:15	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/26/2011 2:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 2:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 3:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 3:15	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/26/2011 3:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 3:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/26/2011 4:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 4:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 4:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 4:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 5:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 5:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 5:30	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/26/2011 5:45	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/26/2011 6:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 6:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 6:30	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/26/2011 6:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 7:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 7:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 7:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 7:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 8:00	8.7 Level	1.3	2.073	0.773	9.275	2.08	932.9
7/26/2011 8:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/26/2011 8:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/26/2011 8:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
7/26/2011 9:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/26/2011 9:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
7/26/2011 9:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/26/2011 9:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/26/2011 10:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
7/26/2011 10:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7























7/31/2011 19:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 20:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 20:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 20:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 20:45	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
7/31/2011 21:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 21:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 21:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/31/2011 21:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/31/2011 22:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/31/2011 22:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/31/2011 22:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 22:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 23:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/31/2011 23:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
7/31/2011 23:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
7/31/2011 23:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3

**Appendix H**

**South Flume Orpheus Mini Data with Flowrates**

Date	Time	Depth from top of flume to water (ft)	Depth of Flume Total (ft)	Depth of Flow (ft)	Flowrate (cfs)	Flowrate (gpm)
7/1/2011	12:00:00 AM		1.80	2.5	0.70	1.79
7/1/2011	1:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	2:00:00 AM		1.80	2.5	0.70	1.79
7/1/2011	3:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	4:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	5:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	6:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	7:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	8:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	9:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	10:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	11:00:00 AM		1.81	2.5	0.69	1.75
7/1/2011	12:00:00 PM		1.80	2.5	0.70	1.79
7/1/2011	1:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	2:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	3:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	4:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	5:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	6:00:00 PM		1.82	2.5	0.68	1.71
7/1/2011	7:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	8:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	9:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	10:00:00 PM		1.81	2.5	0.69	1.75
7/1/2011	11:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	12:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	1:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	2:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	3:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	4:00:00 AM		1.82	2.5	0.68	1.71
7/2/2011	5:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	6:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	7:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	8:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	9:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	10:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	11:00:00 AM		1.81	2.5	0.69	1.75
7/2/2011	12:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	1:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	2:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	3:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	4:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	5:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	6:00:00 PM		1.81	2.5	0.69	1.75
7/2/2011	7:00:00 PM		1.82	2.5	0.68	1.71
7/2/2011	8:00:00 PM		1.82	2.5	0.68	1.71

7/2/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/2/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/2/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/3/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/3/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/3/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/3/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/3/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/3/2011	3:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	4:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	5:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	6:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	7:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	8:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	9:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	10:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/3/2011	11:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/4/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	2:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/4/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/4/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/4/2011	11:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/4/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/4/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/4/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/4/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/4/2011	4:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/4/2011	5:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/4/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/4/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9

7/4/2011	8:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/4/2011	9:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/4/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/4/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/5/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/5/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/5/2011	3:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/5/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/5/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/5/2011	6:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/5/2011	7:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/5/2011	8:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/5/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/5/2011	10:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/5/2011	11:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/5/2011	12:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/5/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/5/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/5/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/6/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/6/2011	1:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/6/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/6/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/6/2011	4:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/6/2011	5:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/6/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/6/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/6/2011	8:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/6/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/6/2011	10:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/6/2011	11:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/6/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/6/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/6/2011	2:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/6/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/6/2011	4:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/6/2011	5:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/6/2011	6:00:00 PM	1.75	2.5	0.75	1.99	891.5

7/6/2011	7:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/6/2011	8:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/6/2011	9:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/6/2011	10:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/6/2011	11:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/7/2011	12:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/7/2011	1:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/7/2011	2:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/7/2011	3:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/7/2011	4:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/7/2011	5:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/7/2011	6:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/7/2011	7:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/7/2011	8:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/7/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/7/2011	10:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/7/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/7/2011	12:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/7/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/7/2011	2:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/7/2011	3:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/7/2011	4:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/7/2011	5:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/7/2011	6:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/7/2011	7:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/7/2011	8:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/7/2011	9:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/7/2011	10:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/7/2011	11:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/8/2011	12:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	1:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	2:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	3:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	4:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	5:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	6:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	7:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	8:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/8/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/8/2011	10:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/8/2011	12:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/8/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/8/2011	2:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/8/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/8/2011	4:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/8/2011	5:00:00 PM	1.80	2.5	0.70	1.79	803.2

7/8/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/8/2011	7:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/8/2011	8:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/8/2011	9:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/8/2011	10:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/8/2011	11:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/9/2011	12:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/9/2011	1:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/9/2011	2:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/9/2011	3:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	4:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	5:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	6:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	7:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	8:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	9:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	10:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/9/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/9/2011	12:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/9/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/9/2011	2:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/9/2011	3:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/9/2011	4:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/9/2011	5:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/9/2011	6:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/9/2011	7:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/9/2011	8:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/9/2011	9:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/9/2011	10:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/9/2011	11:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/10/2011	12:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	1:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	2:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	3:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	4:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	5:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	6:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	7:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/10/2011	8:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	9:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	10:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/10/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/10/2011	12:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/10/2011	1:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/10/2011	2:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/10/2011	3:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/10/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9

7/10/2011	5:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/10/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/10/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/10/2011	8:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/10/2011	9:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/10/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/10/2011	11:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/11/2011	12:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	1:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	2:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	3:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	4:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	5:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	6:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	7:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	8:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	10:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	11:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/11/2011	12:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/11/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/11/2011	2:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/11/2011	3:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/11/2011	4:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/11/2011	5:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/11/2011	6:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/11/2011	7:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/11/2011	8:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/11/2011	9:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/11/2011	10:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/11/2011	11:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/12/2011	12:00:00 AM	1.75	2.5	0.75	1.99	891.5
7/12/2011	1:00:00 AM	1.72	2.5	0.78	2.11	945.9
7/12/2011	2:00:00 AM	1.71	2.5	0.79	2.15	964.2
7/12/2011	3:00:00 AM	1.71	2.5	0.79	2.15	964.2
7/12/2011	4:00:00 AM	1.72	2.5	0.78	2.11	945.9
7/12/2011	5:00:00 AM	1.73	2.5	0.77	2.07	927.6
7/12/2011	6:00:00 AM	1.73	2.5	0.77	2.07	927.6
7/12/2011	7:00:00 AM	1.74	2.5	0.76	2.03	909.5
7/12/2011	8:00:00 AM	1.75	2.5	0.75	1.99	891.5
7/12/2011	9:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/12/2011	10:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/12/2011	11:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/12/2011	12:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/12/2011	1:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/12/2011	2:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/12/2011	3:00:00 PM	1.78	2.5	0.72	1.87	838.1

7/12/2011	4:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/12/2011	5:00:00 PM	1.74	2.5	0.76	2.03	909.5
7/12/2011	6:00:00 PM	1.72	2.5	0.78	2.11	945.9
7/12/2011	7:00:00 PM	1.72	2.5	0.78	2.11	945.9
7/12/2011	8:00:00 PM	1.72	2.5	0.78	2.11	945.9
7/12/2011	9:00:00 PM	1.73	2.5	0.77	2.07	927.6
7/12/2011	10:00:00 PM	1.73	2.5	0.77	2.07	927.6
7/12/2011	11:00:00 PM	1.74	2.5	0.76	2.03	909.5
7/13/2011	12:00:00 AM	1.75	2.5	0.75	1.99	891.5
7/13/2011	1:00:00 AM	1.75	2.5	0.75	1.99	891.5
7/13/2011	2:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/13/2011	3:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/13/2011	4:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/13/2011	5:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/13/2011	6:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/13/2011	7:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/13/2011	8:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/13/2011	9:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/13/2011	10:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/13/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/13/2011	12:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/13/2011	1:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/13/2011	2:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	3:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/13/2011	4:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	5:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	6:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	7:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	8:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	9:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	10:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/13/2011	11:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/14/2011	12:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/14/2011	1:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/14/2011	2:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/14/2011	3:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/14/2011	4:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/14/2011	5:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/14/2011	6:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/14/2011	7:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/14/2011	8:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/14/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/14/2011	10:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/14/2011	11:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/14/2011	12:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/14/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/14/2011	2:00:00 PM	1.80	2.5	0.70	1.79	803.2

7/14/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/14/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/15/2011	12:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/15/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	3:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/15/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	10:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/15/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/15/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/15/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/15/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/15/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/15/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/15/2011	5:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/15/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/15/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/15/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/15/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/15/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/15/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/16/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/16/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/16/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	10:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/16/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/16/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9

7/16/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/16/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/17/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/17/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/17/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/17/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/17/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/17/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/17/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/17/2011	5:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/17/2011	6:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/17/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/17/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/17/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/17/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/17/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/18/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/18/2011	1:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/18/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/18/2011	3:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/18/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/18/2011	5:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/18/2011	6:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/18/2011	7:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/18/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/18/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/18/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/18/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/18/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9

7/18/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/18/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/18/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/18/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/18/2011	5:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/18/2011	6:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/18/2011	7:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/18/2011	8:00:00 PM	1.78	2.5	0.72	1.87	838.1
7/18/2011	9:00:00 PM	1.77	2.5	0.73	1.91	855.8
7/18/2011	10:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/18/2011	11:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/19/2011	12:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/19/2011	1:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/19/2011	2:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/19/2011	3:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/19/2011	4:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/19/2011	5:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/19/2011	6:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/19/2011	7:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/19/2011	8:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/19/2011	9:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/19/2011	10:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/19/2011	11:00:00 AM	1.80	2.5	0.70	1.79	803.2
7/19/2011	12:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/19/2011	1:00:00 PM	1.80	2.5	0.70	1.79	803.2
7/19/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/19/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/19/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/19/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/19/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/19/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/19/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/19/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/19/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/19/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/20/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9

7/20/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/20/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/20/2011	2:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/20/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/20/2011	5:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/20/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	2:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	3:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/21/2011	5:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/21/2011	7:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	8:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/21/2011	10:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/21/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/21/2011	12:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	1:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	2:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/21/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	5:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/21/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	2:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	3:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	4:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	5:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	6:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	7:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	8:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	9:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	10:00:00 AM	1.82	2.5	0.68	1.71	768.8

7/22/2011	11:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/22/2011	12:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	1:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	2:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	3:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/22/2011	4:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/22/2011	5:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/22/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/22/2011	11:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	2:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	3:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	4:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	5:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	6:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	7:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	8:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	9:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	10:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	11:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/23/2011	12:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	1:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/23/2011	2:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/23/2011	3:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/23/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/23/2011	5:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	6:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	7:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	8:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	9:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	10:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/23/2011	11:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/24/2011	12:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	1:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	2:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	3:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/24/2011	4:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	5:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/24/2011	6:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	7:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	8:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	9:00:00 AM	1.83	2.5	0.67	1.68	751.8

7/24/2011	10:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	11:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/24/2011	12:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/24/2011	1:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/24/2011	2:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/24/2011	3:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/24/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/24/2011	5:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/24/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/24/2011	7:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/24/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/24/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/24/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/24/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/25/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/25/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/25/2011	2:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/25/2011	3:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/25/2011	4:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/25/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/25/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/25/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/25/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/25/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/25/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/25/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/25/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/25/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/25/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/25/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/25/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/25/2011	5:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/25/2011	6:00:00 PM	1.74	2.5	0.76	2.03	909.5
7/25/2011	7:00:00 PM	1.72	2.5	0.78	2.11	945.9
7/25/2011	8:00:00 PM	1.71	2.5	0.79	2.15	964.2
7/25/2011	9:00:00 PM	1.7	2.5	0.80	2.19	982.7
7/25/2011	10:00:00 PM	1.71	2.5	0.79	2.15	964.2
7/25/2011	11:00:00 PM	1.72	2.5	0.78	2.11	945.9
7/26/2011	12:00:00 AM	1.73	2.5	0.77	2.07	927.6
7/26/2011	1:00:00 AM	1.74	2.5	0.76	2.03	909.5
7/26/2011	2:00:00 AM	1.75	2.5	0.75	1.99	891.5
7/26/2011	3:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/26/2011	4:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/26/2011	5:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/26/2011	6:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/26/2011	7:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/26/2011	8:00:00 AM	1.79	2.5	0.71	1.83	820.6

7/26/2011	9:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/26/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/26/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/26/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/26/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/26/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/26/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/26/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/26/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/26/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/26/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/26/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/26/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/26/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/26/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/27/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/27/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/27/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/27/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/27/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/27/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/27/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/27/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/27/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/27/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/27/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/27/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
7/27/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/27/2011	1:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/27/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/27/2011	3:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/27/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/27/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/27/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/27/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/27/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/27/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/27/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/27/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/28/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/28/2011	2:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/28/2011	3:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/28/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/28/2011	5:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/28/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/28/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9

7/28/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/28/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/28/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/28/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/28/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/28/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/28/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/28/2011	3:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	5:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	7:00:00 PM	1.83	2.5	0.67	1.68	751.8
7/28/2011	8:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/28/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/29/2011	12:00:00 AM	1.83	2.5	0.67	1.68	751.8
7/29/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	2:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	3:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	4:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	5:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	6:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	7:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	8:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	9:00:00 AM	1.82	2.5	0.68	1.71	768.8
7/29/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/29/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/29/2011	12:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/29/2011	1:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/29/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	3:00:00 PM	1.82	2.5	0.68	1.71	768.8
7/29/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/29/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/30/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9

7/30/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
7/30/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/30/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/30/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/30/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/30/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/30/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/30/2011	6:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/30/2011	7:00:00 PM	1.76	2.5	0.74	1.95	873.6
7/30/2011	8:00:00 PM	1.72	2.5	0.78	2.11	945.9
7/30/2011	9:00:00 PM	1.69	2.5	0.81	2.23	1001.4
7/30/2011	10:00:00 PM	1.69	2.5	0.81	2.23	1001.4
7/30/2011	11:00:00 PM	1.7	2.5	0.80	2.19	982.7
7/31/2011	12:00:00 AM	1.71	2.5	0.79	2.15	964.2
7/31/2011	1:00:00 AM	1.72	2.5	0.78	2.11	945.9
7/31/2011	2:00:00 AM	1.73	2.5	0.77	2.07	927.6
7/31/2011	3:00:00 AM	1.74	2.5	0.76	2.03	909.5
7/31/2011	4:00:00 AM	1.75	2.5	0.75	1.99	891.5
7/31/2011	5:00:00 AM	1.76	2.5	0.74	1.95	873.6
7/31/2011	6:00:00 AM	1.77	2.5	0.73	1.91	855.8
7/31/2011	7:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/31/2011	8:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/31/2011	9:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/31/2011	10:00:00 AM	1.78	2.5	0.72	1.87	838.1
7/31/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
7/31/2011	12:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/31/2011	1:00:00 PM	1.79	2.5	0.71	1.83	820.6
7/31/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/31/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/31/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/31/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/31/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/31/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/31/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/31/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
7/31/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
7/31/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2